

# LOS ANGELES, CA, DISTRICT

This district (total area about 230,000 square miles) comprises those drainage basins tributary to the Pacific Ocean that are in California between the Mexican boundary and Cape San Martin (about 265 miles north of the entrance to the Los Angeles Harbor). The lower Colorado River

drainage basin (below Lee Ferry, AZ) which is southeastern California, southeastern Nevada, southwestern Utah, and all of Arizona, except the northeastern corner; that part of the Great Basin that is in southern Nevada and southeastern California; and the southern Arizona that drain southward into Mexico.

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## **REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FISCAL YEAR 2003**

### **Navigation**

#### **1. CHANNEL ISLANDS HARBOR, CA**

**Location.** On the coast of southern California about a mile northwest of Port Hueneme, 65 miles northwest of Los Angeles Harbor, and 345 miles south of San Francisco. (See Coast and Geodetic Survey Charts 5007 and 5202.)

**Existing project.** For details see page 33-2 of Annual Report for 1981.

**Local cooperation.** Fully complied with.

**Terminal facilities.** For details see page 33-2 of Annual Report for 1989.

**Operations during fiscal year.** A six year, three-cycle dredging contract was designed and awarded in FY2000. The contract covers FY2001 through FY2006. Mobilization and dredging activities began in September 2002 and continued into FY2003. Total O&M, General obligations in FY2003 were \$3,388,509. Project condition good.

#### **2. IMPERIAL BEACH, SILVER STRAND SHORELINE, CA**

**Location:** Imperial Beach area is located in San Diego County on the southern end of the Silver Strand Peninsula, about 3.5 miles north of the United States-Mexico border.

**Existing project** The authorized project consisted of a system of five stone groins, the most northern groin at the north end of the existing seawall of the U. S. Naval Radio Station, and four other groins spaced at intervals of about 1,000 feet to a point 400 feet south of Coronado Avenue (now Imperial Beach Boulevard). A General Reevaluation Report was completed in FY 2002.

**Local cooperation.** City of Imperial Beach is the local sponsor.

**Operations during fiscal year.** Chief of Engineers Report was approved in December 2003 recommending an initial sand fill with periodic beach nourishment. The new recommended project is currently awaiting authorization in WRDA 2004.

#### **3. LOS ANGELES – LONG BEACH HARBORS, CA**

**Location.** On the coast of southern California in San

Pedro bay about 25 miles south of the city of Los Angeles, about 96 miles northwest of San Diego Harbor, and about 410 miles southeast of San Francisco Harbor.

**Existing project.** The project consists of four increments of dredging to be constructed in two stages - deepening the existing entrance channel for the Port of Los Angeles and providing new channels to existing and new port facilities. The dredge material will be used for fill to create Pier 400. Estimated cost (October 1998) for existing project is \$401,000,000 (includes an allowance for estimated inflation through the construction period), of which \$115,200,000 is Federal (\$114,900,000 Corps and \$300,000 U.S. Coast Guard) and \$285,800,000 is non-Federal.

**Local cooperation.** All items of local cooperation required under the terms of the previous authorizing acts have been fully complied with. See page 33-3 of Annual Report for 1981 for requirements under the terms of the 1976 Water Resources Development Act. The revised recommended project was changed due to the withdrawal of the Port of Long Beach on October 1, 1991. The Port of Los Angeles, the local sponsor, received credit, for advance work (Stage 1) performed per WRDA 1988. Project Cooperation Agreement executed March 18, 1997.

**Terminal Facilities.** Of the 82,553 feet of wharves in the Los Angeles Harbor, 75,729 feet are owned by the city and 6,824 feet are owned by private interests. The final report presented and recommended four project increments. Increment No. 2 would deepen the existing Los Angeles Harbor approach and entrance channels to Pier 300 to provide better access to dry bulk facilities. Increment No. 3 would further deepen the Los Angeles approach and entrance channel to Pier 300 and part of Pier 400, and deepen a south channel to provide access to the eastern side of Pier 400 and liquid bulk facilities. Increments No. 4 and 5 would extend Increment No. 3 of Los Angeles to provide access to container terminals that would be located on part of Pier 300 and Pier 400. The material obtained from the dredging was used to create new landfill within the port and shallow water habitat for the least tern.

**Operations during fiscal year.** A Long-Term Disposal Management Plan and a Pilot Project were continued from FY2002. Also, portions of the project were surveyed. Total O&M, General obligations were \$304,555. Project condition is good.

#### **4. LOS ANGELES HARBOR MAIN CHANNEL DEEPENING, CA**

**Location.** The project area is located at the Port of Los Angeles on the coast of southern California in San Pedro

Bay, approximately 25 miles south of downtown Los Angeles.

**Existing project.** The proposed project would dredge 6.6 million cubic yards of sediment from the Los Angeles Main Channel, West Basin, East Channel, East Basin, and Cerritos Channel with disposal at Southwest Slip, Cabrillo Shallow Water Habitat and pier 400. The plan would also create approximately 40 acres of additional terminal space at Pier 300.

**Local cooperation.** The Port of Los Angeles and the Corps of Engineers executed the Project Cooperation Agreement July 25, 2002.

**Operations during fiscal year.** Continued construction and dredging of main channel.

## 5. MARINA DEL REY, CA

**Location.** Marina del Rey is located on Santa Monica Bay, 15 miles west of downtown Los Angeles, 29 miles northwest of Los Angeles Harbor and 390 miles south-east of San Francisco Bay.

**Existing project.** For details see page 33-3 of Annual Report for 1981. Existing Federal navigation project consists of two jetties a breakwater and navigation channels. Contaminated materials, causing costly maintenance and a potential threat to navigation, complicate a severe shoaling problem in the harbor.

**Local cooperation.** County of Los Angeles Department of Beaches and Harbors requested a new study, and expressed local support by letter dated August 5, 1992. Feasibility Cost Sharing Agreement signed February 21, 1997.

**Terminal facilities.** Marina del Rey is homeport to about 15 commercial fishing boats and 50 other transit boats with an annual fish catch valued at approximately \$10 million. There are about ten charter boat and five tour boat operations used by over 100,000 people each year and over 6,000 berths servicing recreational craft within the harbor. Eight yacht clubs call the marina homeport. The marina offers sailing instruction, boat rental, repair and storage, harbor tours, sport fishing, retail facilities, coffee shops, snack bars and fine restaurants. The U.S. Coast Guard has a cutter permanently assigned to the harbor.

**Operations during fiscal year.** A hydrographic survey of the harbor was conducted. A Dredging Disposal Pilot Project supported by WES was continued from FY2002. Total O&M, General obligations were \$48,489. Project

condition is good.

## 6. MORRO BAY HARBOR, CA

**Location.** On coast of southern California 110 miles south of Monterey Bay, 120 miles northwest of Santa Barbara Harbor, and nearly midway between San Francisco and Los Angeles. (see Coast and Geodetic Survey Chart 5387).

**Existing project.** For details, see page 33-4 of Annual Report for 1980.

**Local cooperation.** Project Cooperation Agreement executed on April 7, 1995.

**Terminal facilities.** Facilities which are adequate for existing commerce, comprise 640 feet of existing piers and 150 feet of floating docks constructed by San Luis Obispo County; 263 feet of floating docks constructed by California Department of Parks and Recreation; 1,396 feet of floating docks constructed by the city of Morro Bay; 1,398 feet of privately-owned piers; and 5,435 feet of privately-owned floating docks.

**Operations during the fiscal year.** Annual maintenance dredging of the Entrance Channel was performed. Total O&M, General obligations were \$1,160,560.

## 7. NEWPORT BAY HARBOR, CA

**Location.** Forty miles southeast of Los Angeles.

**Existing project.** Provides rubblemound entrance jetties, 920-foot deep and 500-foot wide entrance channel and main channel, inner channels, a turning basin, and anchorage areas. Upper Newport is a shallow 800-acre marine estuary. Navigation project is maintained by Corps of Engineers. Pursuant to Section 841 and subject to Section 903(b) of WRDA 1986, the project for navigation for the harbor is modified to dredge and maintain a 250-foot wide channel in Upper Newport Bay to the boundary of Upper Newport Bay State Ecological Preserve to a depth of 15 feet.

**Local cooperation.** In a resolution dated August 20, 1996, Orange County Board of Supervisors indicated strong support of feasibility study and understanding of cost sharing requirements.

**Operations during fiscal year** The Committee added \$880,000 for maintenance dredging. Only portions of the Entrance, Main, and Balboa Channels were dredged due to contaminants in the dredge material making it unsuitable for beach or ocean disposal. Total O&M,

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General obligations were \$1,232,936. Project condition is adequate.

### **8. OCEANSIDE HARBOR, CA**

**Location.** On the coast of southern California at Oceanside, about 30 miles north of city of San Diego and 80 miles south of Los Angeles.

**Existing project.** For details, see page 33-4 of Annual Report for 1981.

**Local cooperation.** Fully complied with. Oceanside Small Harbor Craft District sent letter of support dated April 1985 and Letter of Intent in March 1989. Project Cooperation Agreement executed in January 1993.

**Terminal Facilities.** Berthing for 957 boats, single-tie slips, 38 double-tie slips and 136 side-ties, of which 54 are visitors' slips; 12 dry storage spaces at Oceanside Marine Center; a fuel dock; a boat hoist; a launching ramp, which can accommodate 4 launchings at the same time; parking for 1,732 cars; with temporary parking for about 141 boat trailers; a boat-repair facility; a pump-out facility; a Coast Guard cutter; restaurants; retail stores; yacht brokers; a hotel/motel; condominiums; and a sport-fishing facility. Navigation improvements include new dredging and biannual dredging of expanded entrance channel area.

**Operations during fiscal year.** Annual contract maintenance dredging was performed. Total O&M, General obligations were \$1,173,434. Project condition is fair.

### **9. OCEANSIDE HARBOR SAND BYPASS, CA**

**Location.** On the coast of southern California along Oceanside Beach near jetty, about 30 miles north of city of San Diego and 80 miles south of Los Angeles.

**Existing project.** Underwater experimental pumping system with the pumps, fluidizers, and submerged pipeline to remove sand from harbor entrance and deposit it to down-coast beaches, on a continual basis. Phase I and Phase II have both been completed and successfully tested. The experiment is complete and we have determined the bypass technology can be installed with a successful operation but, not at Oceanside.

**Local Cooperation.** City of Oceanside officials support closure of the experimental bypass project.

**Operations during fiscal year.** Project close out completed.

### **10. PORT HUENEME, CA**

**Location.** On the coast of southern California about 65 miles northwest of Los Angeles and Long Beach Harbors, about one mile southeast of Channel Islands Harbor, immediately west of the city of Port Hueneme, four miles southwest of the city of Oxnard, and 10 miles southeast of the city of Ventura.

**Existing Project.** Authorized in 1970 for restudy of completed project. The harbor serves both military and commercial uses with port facilities consisting of terminals, wharves, and warehouses serving a wide variety of products.

The existing Federal project consists of an approach channel, entrance channel, central basin, and two rubblemound jetties.

The Navy has plans to utilize the harbor more extensively for vessel berthing and repair; effectively reducing maneuverability in the harbor. Harbor District would like to use deeper draft wood pulp carrier vessels and possibly tankers.

**Local cooperation.** Requirements are described in full on page 33-3 of Annual Report for 1976. The Oxnard Harbor District reviewed and agreed to sign the Feasibility Cost Sharing Agreement on January 3, 1996.

**Operations during fiscal year.** A hydrographic survey of the harbor was conducted. Total O&M, General obligations were \$18,436. Project condition is good.

### **11. PORT OF LONG BEACH (DEEPENING), CA**

**Location.** On the coast of southern California along the Pacific Coast in San Pedro Bay about 20 miles south of downtown Los Angeles.

**Existing Project.** The recommended plan consists of deepening the approach channel to -76 MLLW, from breakwater seaward, a distance of about 2 miles to accommodate deep draft crude tankers. WRDA 1996 authorized project in accordance with the July 1996 Chief of Engineers Report. Dredging to -76 feet MLLW of the approach channel was completed in December 2000. Prior condition survey indicated that turning basin and navigation channel inside the harbor were not dredged by POLB to -76 feet. Anticipated cost to complete project is within project cost estimate.

The estimated cost of the project (October 1998) is \$43,350,000.

**Local cooperation.** The Port of Long Beach is the local sponsor. The Project Cooperation Agreement was executed in July 1998.

**Operation during the fiscal year.** Continue design and Plans & Specifications for remaining work in entrance channel. Estimated cost is \$5.7 million.

## 12. REDONDO BEACH HARBOR (KING HARBOR), CA

**Location.** On the coast of southern California on the southern portion of Santa Monica Bay, about 17 miles southwest of Los Angeles.

**Existing project.** For details, see page 33-4 of Annual Report for 1981. WRDA of 1986 (H.R. 6) Conference Bill, Title VIII - Project Modification, Section 809 - King Harbor, Redondo Beach, CA, modifies the King Harbor Project in order to carry out maintenance dredging and for breakwater construction, and authorized the Secretary to restore the breakwater to a height of 22 feet and maintain breakwater at such height to provide greater protection from heavy wave action.

**Local cooperation.** City of Redondo Beach officials are in full support of the study and have indicated desire to construct improvements to reduce continued storm related damages.

**Operations during fiscal year.** Rockwork inspections were performed under the project "Project Condition Surveys". Project condition is good.

## 13. SAN DIEGO HARBOR, CA

**Location.** On the coast of southern California just north of the Mexican border, about 109 miles southeast of Los Angeles and Long Beach Harbors. (See Coast and Geodetic Survey Chart 5107).

**Existing project.** For details, see pages 33 and 34 of Annual Report for 1980.

**Local cooperation.** Requirements are described in full on pages 33 and 34 of Annual Report for 1980.

**Terminal facilities.** Consists of 45,070 feet of wharves, exclusive of Government-owned and 24,000 feet are privately owned. Government-owned wharves at North Island are restricted to military use only.

**Operations during fiscal year.** A hydrographic survey of the harbor was conducted. Total O&M, General obligations were \$116,649. Project condition is good.

## 14. SAN DIEGO RIVER AND MISSION BAY, CA

**Location.** The project is located at the mouth of the San Diego River about six miles northwest of the San Diego business district, San Diego County, California.

**Existing project.** For details, see page 33-3 of Annual Report for 1991. Authorized by the Flood Control Act of 1944, the existing project consists of a levee channel, entrance channel, main channel, altered railroad bridge, anchorage basins (West Anchorage and Quivira) and three jetties. Construction of a 1,200-foot-long weir restored design conveyance capacity at the mouth of the San Diego River. A sand plug in mouth of river reduced flood-carrying capability from 115,000 cfs to 35,000 cfs, equal to a 100-year flood. The temporary timber pile breakwater at Quivira Basin was replaced with a permanent rubble mound breakwater.

**Local cooperation.** The Project Cooperation Agreement was executed July 1996 with the city of San Diego.

**Operations during fiscal year.** A hydrographic survey of the harbor was conducted. Engineering and Design efforts for the repair of the Middle Jetty and for dredging the Entrance Channel continued from FY2002. Environmental evaluations were conducted regarding contaminated dredge material. Total O&M, General obligations were \$146,850. Project condition is fair.

## 15. SANTA BARBARA HARBOR, CA

**Location.** On the coast of southern California, 90 miles northwest of Los Angeles Harbor.

**Existing project.** For details on original, see page 33-4 Annual Report for 1983. For reevaluation details see WRDA, 1986. The recommended plan includes acquiring a permanent dredge for the city and they will assume the operation and maintenance of the channel.

**Local cooperation.** See page 1015 of Annual Report for 1969, for items of local cooperation under 1962 authorized modification of existing project. The city reaffirmed its support on January 23, 2002.

**Operations during fiscal year.** A three-year, six-cycle contract was awarded for FY2002 through FY2004. Annual contract maintenance dredging (two cycle) was performed. Total O&M, General obligations were \$1,144,366. Project condition is fair.

## 16. SANTA MONICA BREAKWATER, CA

**Location.** Santa Monica Breakwater is located seaward of the Santa Monica Pier, approximately 15 miles west of downtown Los Angeles. Existing breakwater is 2,000 feet long and lies 1,300 feet from the shoreline.

**Existing project.** The authorized project comprises reconstruction of 900 feet of the southern end of the existing

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breakwater to an elevation of +10 feet MLLW for storm damage prevention and constructing an offshore boulder-field for fish habitat. The local sponsor will provide 12 moorings and other boating support facilities to reestablish commercial boating opportunities. WRDA 1996 authorized the project. The estimated cost of the project is \$7,200,000 (Federal cost is \$4,700,000 which includes \$40,000 US Coast Guard; Non-Federal cost is \$2,500,000).

**Local cooperation.** City of Santa Monica, the local sponsor, indicated its support in July 1995 for the authorized project and its willingness and intent to execute the Project Cooperation Agreement.

**Operations during fiscal year.** None.

### **17. SURFSIDE, SUNSET AND NEWPORT BEACH, CA**

**Location.** Project extends along Orange County coastline, 17 miles from San Gabriel River mouth downcast to Newport Bay Harbor entrance.

**Existing project.** Authorization Section 101 of Rivers and Harbors Act 1962. Modified by Chief of Engineers September 1963. Project is a periodic continuing construction project.

**Local cooperation.** State of California, Orange County, Cities of Newport and Huntington Beach, and Surfside Colony. Funding agreement with the State of California for Stage 11 was executed on August 9, 2001.

**Operations during fiscal year.** None

### **18. VENTURA HARBOR, CA**

**Location.** Located 65 miles northwest of Los Angeles and six miles northwest of Channel Islands Harbor.

**Existing project.** For details, see page 33-5 of the Annual Report for 1981. Reevaluation under WRDA 1990 consists of modification to the existing harbor by constructing a separate South Beach groin, extending the offshore breakwater, adding a spur groin to the north jetty and detached breakwater, and deepening and extending the entrance channel and sand trap.

**Local cooperation.** Fully complied with.

**Operations during fiscal year.** Annual contract maintenance dredging was performed. The South Beach Groin was repaired. Total O&M, General obligations were \$4,797,828. Project Condition is fair.

### **18A. NAVIGATION/BEACH EROSION**

## **CONTROL WORK UNDER SPECIAL AUTHORIZATION**

### **Navigation activities pursuant to Section 107, Public Law 86-645.**

Federal cost for Section 107 was \$84,907 of which \$71,424 was used for projects and \$13,483 was used for Coordination Account.

### **Beach erosion control activities pursuant to Section 103, Public Law 87-874 (preauthorization).**

Federal cost for Section 103 was \$85,987 used for projects.

## **Flood Control**

### **19. ALAMO DAM, AZ**

**Location.** About 70 miles southeast of Kingman, Arizona on the Bill Williams River, Arizona a tributary of the Colorado River.

**Existing project.** For details, see page 33-7 of Annual Report 1981.

**Local cooperation.** Fully complied with.

**Operations during fiscal year.** Routine operations and maintenance were performed. A Formal Periodic Inspection was completed. Total O&M, General obligations were \$1,109,948. Project condition is good.

### **20. CLIFTON, AZ**

**Location.** Located on San Francisco River approximately 170 miles northeast of Tucson in Greenlee County, AZ.

**Existing project.** The project consists of both structural and nonstructural elements, including an earthfill levee about 3,000 feet long, with floodgates and floodwalls. Implementation will involve flood proofing of 11 businesses, flood plain evacuation plans, and recreation development. Estimated cost (October 1998) for existing project is \$24,100,000 (includes \$2,600,000 cash contribution and \$5,400,000 other costs). Construction of the levee and floodwall was completed August 1995 and turned over to sponsor December 1996. Completed non-structural relocation in December 1998.

**Local cooperation.** The State of Arizona, Division of Emergency Services, is the local sponsor. Project Cooperation Agreement executed on July 30, 1993.

**Operations during fiscal year.** None.

## 21. HANSEN DAM, LACDA, (RECREATION DEVELOPMENT), CA

**Location.** In the San Fernando Valley area of the city of Los Angeles about 20 miles northwest of downtown Los Angeles. Recreation lake and facilities lie within flood control basin boundaries.

**Existing project.** Original project authorized under Flood Control Act 1936, and modified by WRDA 1986, Section 847 Energy and Water Development Act 1992 (PL 102-104). Project consists of two phases. Phase 1 is the excavation of the lake, and rough grading of the roadways and building pad locations. Phase 2 is the construction of a 10.5-acre recreation lake, picnic facilities, access roads, parking lots, and landscaping.

**Local cooperation.** Project is 50/50 cost shared with the city of Los Angeles.

**Operations during fiscal year.** In FY2003, the Committee added \$3,160 for Recreation Development and Environmental Restoration. Coordination with local interests on exact usages of funds was initiated and engineering and design efforts were begun. Total O&M, General obligations were \$155,690. Remaining funds were carried over into FY2004. Project condition is good.

## 22. HOLBROOK, AZ

**Location.** Located along the Little Colorado River in the City of Holbrook, AZ, about 150 miles northeast of Phoenix.

**Existing project.** The completed project will provide 100-year-flood protection to 696 residences and 205 commercial, industrial, and public buildings. Estimated cost (October 1996) for this project is \$14,600,000, of which \$11,000,000 is Federal and \$3,600,000 is non-Federal (includes \$1,935 cash contribution and \$1,665,000 other costs).

**Local cooperation.** The City of Holbrook signed the Project Cooperation Agreement, on August 24, 1993.

**Operations during fiscal year.** Site inspected for safety.

## 23. LOS ANGELES COUNTY DRAINAGE AREA, CA

**Location.** Along Los Angeles and San Gabriel Rivers, Rio Hondo, and Compton Creek, CA.

**Existing project.** Project consists of channel improvement to lower Los Angeles, Rio Hondo Rivers, Compton Creek,

and modification/replacement of as many as 27 bridges necessitated by the channel improvements. A map of the rehabilitation plan is in "General Design Memorandum, Los Angeles River Rehabilitation under the Major Rehabilitation Program," dated January 1984 and revised in March 1984. Estimated cost (October 1999) for existing project is \$200,000,000 of which \$150,000,000 is Federal and \$50,000,000 is non-Federal (includes \$43,968,000 cash contribution and \$6,032,000 other costs).

**Local cooperation.** In February 1992, the Los Angeles County Department of Public Works, the local sponsor, affirmed its support and willingness to financially participate in the construction of the project at a level consistent with the current cost-sharing policy for construction. The Project Cooperation Agreement was executed August 7, 1995.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. Engineering and Design efforts were continued for repair of the: 1) San Gabriel River Levee Armor Stone (scouring) at the confluence of San Jose Creek, 2) Los Angeles River Overlay, 3) San Gabriel River Drop Structure. Los Angeles River Vertical Walls Replacement (three panels) and the Compton Creek Channel Wall Repair were completed. Contractual debris removal was conducted at Compton Creek and Hansen Dam. Chemical sprays were used to stop the regrowth of Arundo in the soft-bottom flood control channels at Sepulveda Dam in the Los Angeles River and at Whittier Narrows Dam in the San Gabriel River.

Periodic Inspections at Santa Fe and Whittier Narrows Dams were completed. Total O&M, General obligations were \$5,596,147. Project condition of Dams and Channels is good.

## 24. LOS ANGELES RIVER, SEPULVEDA TO ARROYO SECO, (RECREATION DEVELOPMENT), CA

**Location.** Upper Los Angeles River from Sepulveda Flood Control Basin (located 25 miles northwest of the city of Los Angeles) to the confluence of the Arroyo Seco channel, a distance of 20 miles.

**Existing project.** The Upper Los Angeles River consists primarily of a rectangular channel from the Sepulveda Basin to a point approximately four miles above the Arroyo Seco as a trapezoidal channel of the Arroyo Seco.

**Local cooperation.** Project is 50/50 cost shared with City of Los Angeles Department of Transportation.

**Operations during fiscal year.** Project close out completed.

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### **25. MOJAVE RIVER DAM, MOJAVE RIVER BASIN, CA**

**Location.** On Mojave River at the Forks site, just downstream from the mouth of Deep Creek and about 14 miles upstream from Victorville, in Mojave River Basin, CA.

**Existing project.** For details, see page 33-8 of Annual Report for 1983.

**Local cooperation.** None required.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. A Periodic Inspection was conducted. Total O&M, General obligations were \$246,252. Project condition is good.

### **26. MURRIETA CREEK, CA**

**Location.** The project is located partly within the city of Flagstaff and entirely within Coconino County, Arizona.

**Existing project.** The recommended project consists of channel modifications, construction of a detention basin, and construction of berms and floodwalls in the Thrope Parka area.

**Local cooperation.** The City of Flagstaff and the Corps of Engineers executed the Design Agreement on April 18, 2001.

**Operations during fiscal year.** Continued preconstruction engineering and design phase.

### **27. NOGALES WASH, AZ**

**Location.** At the Mexican Border, in extreme southern Arizona in central and northern portions of the city of Nogales, about 60 miles south of Tucson.

**Existing project.** Current plan includes a flood warning system in Mexico and United States. Estimated cost (October 2000) for existing project is \$560,000, \$420,000 of which is Federal and \$140,000 is non-Federal.

**Local cooperation.** Project Cooperation Agreement scheduled for execution in the last quarter of Fiscal Year 2002. Negotiating agreement with Mexico through U.S. International Boundary and Water Commission (IBWC).

**Operations during fiscal year.** Final Limited Reevaluation Report to HQ on Sep 2003. Plans and Specifications approved May 2003.

### **28. NORCO BLUFFS, SANTA ANA RIVER, CA**

**Location.** Located approximately 40 miles southeast of Los

Angeles, in the city of Norco, along a 3.75-mile stretch of the south bank of the Santa Ana River.

**Existing Project.** The project consists of a structural solution of revetted-buttress fill using existing and imported fill material one reach, a distance of one mile. The bluff stabilization protects a 65-foot-high bluff from further retreat into a residential neighborhood, which results when flood flows occur in the Santa Ana River. Estimated cost (October 2000) is \$15,000,000 of which \$11,250,000 is Federal and \$3,750,000 is non-Federal.

**Local cooperation.** Local sponsor, Riverside County Flood Control District. Project Cooperation Agreement executed in January 1999.

**Operations during fiscal year.** Phase II, additional buttress fill completed.

### **29. PAINTED ROCK DAM (GILA RIVER), AZ**

**Location.** About 20 miles northwest of Gila Bend, and 120 miles southwest of Phoenix, Arizona.

**Existing project.** For details, see page 33-9 of Annual Report for 1981.

**Local cooperation.** Requirements are described in full on 33-9 of Annual Report for 1981.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. A Periodic Inspection was conducted. Total O&M, General obligations were \$1,084,968. Project condition is good.

### **30. PINE AND MATHEWS CANYONS DAMS, COLORADO RIVER BASIN, NV**

**Location.** In Lincoln County, NV, about 100 miles north of Hoover Dam and about 17 and 20 miles, respectively, east of Caliente, NV.

**Existing project.** For details, see page 33-13 of Annual Report for 1981.

**Local cooperation.** Fully complied with.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. Total O&M, General obligations were \$177,408. Project condition is good.

### **31. RILLITO RIVER, AZ**

**Location.** The project is located in Tucson metropolitan area of Pima County, AZ.



**Existing project.** Plan of improvement includes: 1) an upstream equestrian staging area; 2) an upstream rest area; 3) a downstream rest area; 4) esthetic treatment planting; 5) construction of 16 pedestrian bridges; and 6) pending reauthorization to include extension of authorized project upstream along a portion of Tanque Verde Creek. Estimated cost (October 1998) for existing project is \$40,000,000 (includes an allowance for estimated inflation through the construction period), of which \$28,600,000 is Federal and \$11,400,000 is non-Federal. Flood control portion is \$34,215,468 and recreation is \$5,784,532.

**Local cooperation.** Pima County Transportation and Flood Control District submitted letters of assurance on February 24, 1986 and May 6, 1987. Project Cooperation Agreement (PCA) was executed in June 1994. Amendment to PCA for third increment was executed on September 16, 1998.

**Operations during fiscal year.** None.

### 32. RIO DE FLAG, FLAGSTAFF, AZ

**Location.** The project is located partly within the city of Flagstaff and entirely within Coconino County, Arizona.

**Existing project.** The recommended project consists of channel modifications, construction of a detention basin, and construction of berms and floodwalls in the Thrope Parks area.

**Local cooperation.** The City of Flagstaff and the Corps of Engineers executed the Design Agreement on April 18, 2001.

**Operations during fiscal year.** Continued the pre-construction engineering and design phase for Clay Avenue Wash Detention Basin. Completed local sponsor review of the Design Document Report April 2003 and Internal Technical Review June 2003.

### 33. SANTA ANA RIVER MAINSTEM, CA

**Location.** Along a 75-mile reach of the Santa Ana River in San Bernardino, Riverside, and Orange Counties, emptying into the Pacific Ocean between the cities of Newport Beach and Huntington Harbor, 50 miles south of Los Angeles, and 90 miles north of San Diego.

**Existing project.** For details, see page 33-9 of the Annual Report for 1987. Plan of improvement: Seven Oaks Dam, management of overflow area - Seven Oaks to Prado; raise Mill Creek Levee; additional storage at Prado; improvements along: Oak Street Drain/Riverside Co., Santiago Creek/Orange Co., San Timoteo Creek/San Bernardino Co., and Lower Santa Ana River; recreation development: mitigation and preservation. The estimated cost (October 2003) for existing project is

\$1,496,000,000 (includes an allowance for estimated inflation through the construction period), of which \$1,023,000,000 is Federal and \$473,000,000 is non-Federal (includes \$82,187,000 cash contribution and \$390,813,000 other cost).

**Local cooperation.** Counties of San Bernardino, Riverside, and Orange. Local Cooperation Agreement was signed on December 14, 1989.

**Operations during fiscal year.** Continued engineering and design on Lower Santa Ana River, Santiago Creek, and Prado Dam. Initiated construction on Prado dam Embankment and outlet, LSAR Reach 9, Phase I, and LSAR Reaches 1 and 2 dredging, continued construction on San Timoteo Creek Reach 3B(2) and LSAR Phase IV Landscaping.

### 34. SANTA ANA RIVER BASIN AND ORANGE COUNTY, CA

**Location.** On the Santa Ana River and tributaries and on other streams in Orange, Riverside, and San Bernardino Counties, CA.

**Existing project.** For details on units, see Annual Report for 1968.

**Local cooperation.** Fully complied with. Orange County Water District advocated an increase in water conservation at Prado Dam up to elevation 505 feet. Prado Basin includes significant riparian wetlands, including nesting areas of the endangered least Bell's vireo. The basin is currently under review as proposed critical habitat for the vireo.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. Periodic Inspections at Prado and San Antonio Dams was completed. The update to the Prado Dam Master Plan continued. Total O&M General obligations were \$2,900,420. Project condition of Dams and Channels is good.

### 35. SANTA PAULA CREEK, CA

**Location.** Santa Paula Creek is a tributary of the Santa Clara River in the vicinity of the city of Santa Paula, Ventura County, about 16 miles from the ocean and approximately 60 miles northwest of downtown Los Angeles.

**Existing project.** Authorized by Flood Control Act of 1970, Public Law 91-611 (HD 443/80/1) and for details see Annual Report Fiscal Year 1991, page 33-10. Estimated cost (October 2000) for existing project is \$40,900,000, of which \$39,300,000 is Federal and \$1,600,000 is non-Federal (includes \$0 cash contribution and \$1,600,000 other costs).

**Local cooperation.** Ventura County Flood Control District.

## **REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FISCAL YEAR 2003**

No authorization is required; therefore, the existing Section 221 Agreement is still binding and was amended in September 1996.

**Operations during fiscal year.** Initiated environmental monitoring.

### **36. SAN LUIS REY RIVER, CA**

**Location.** Along the lower 7.2 miles of the San Luis Rey River, in and around the city of Oceanside, San Diego County, about 86 miles south of Los Angeles.

**Existing project.** A double levee, 5.4 miles long; stone protected channel with a soft bottom; 1,330 feet of parapet walls at the ocean on the north and south levees; six interior drainage ponds; and a five-mile bike trail. The Water Resources Development Act of 1996 reauthorized the project. Estimated cost (October 1998) \$81,600,000 of which \$61,100,000 is Federal and \$20,500,000 is non-Federal (including \$4,100,000 cash contribution).

**Local cooperation.** Final Local Cooperation Agreement signed by city of Oceanside and Secretary of Army May 13, 1988.

**Operations during fiscal year.** Continued biological assessment for O&M plan.

### **37. SEPULVEDA DAM, (RECREATION DEVELOPMENT), CA**

**Location.** The project is located between the communities of Encino and Van Nuys and 15 miles northwest of Los Angeles.

**Existing project.** Flood Control Act 1936 and Public Law 77-387 1941, and 1989-1972. Primary project purpose is flood control. Subsequent Act of Congress authorized a secondary project purpose for park and recreation.

**Local cooperation.** Recreation project is 50/50 cost shared with the city of Los Angeles. Federal funds will complete Lake Balboa and park with comfort station, trails, fencing, irrigation, childrens play area, revegetation and develop an additional wildlife area. The city will continue reclaimed water distribution and develop several park areas.

**Operations during fiscal year.** Project construction physically completed January 1999. Total O&M, General obligations in FY2003 were \$1,377. Project condition is good.

### **38. SWEETWATER RIVER, CA**

**Location.** The project empties into San Diego Bay in the city of Chula Vista and National City and unincorporated San

Diego County, four miles south of the city of San Diego, and eight miles north of the Mexican Border.

**Existing project.** Construction of 3.2 miles of channel improvements along the Sweetwater River from Interstate 805 to San Diego Bay, in combination with State Route 54 and Interstate 5 construction; and construction of two railroad bridges and 188 acres of preservation and mitigation land.

**Local cooperation.** San Diego County signed 221 Agreement in December 1984.

**Operations during fiscal year.** None.

### **39. TROPICANA AND FLAMINGO WASHES, NV**

**Location.** The project area is located west of and through urbanized Las Vegas community along both Tropicana and Flamingo Washes in southern Nevada.

**Existing project.** The recommended plan will provide urban flood reduction, erosion control and wildlife enhancement for portions of Las Vegas and the surrounding areas to the west and southwest, including the rapidly developing alluvial fan immediately west of Las Vegas. The plan recommends construction of three debris basins, three detention basins, modifications to two existing detention basins, 28 miles of channels connecting these project elements, 43 miles of lateral collectors, environmental mitigation, and recreation facilities. The estimated cost (October 2001) for the existing project is \$291,000,000 (includes an allowance for estimated inflation), of which \$214,800,000 is Federal and \$76,200,000 is non-Federal (includes \$28,800,000 cash contribution and \$47,400,000 other costs).

**Local cooperation.** The Clark County Regional Flood Control District and the Department of Public Works are the local sponsors for flood control. The Clark County Recreation Department is the potential local sponsor for the recreation feature. The Project Cooperation Agreement (PCA) was executed on February 7, 1995. The Section 211 PCA was executed December 17, 1999. Clark County was reimbursed \$1.6 million for Section 211 work.

**Operations during fiscal year.** Completed construction of the R-4 Detention Basin and channel. Continued the construction of F1/F2 Debris Basins and the Upper Flamingo Diversion Channel. Initiated construction of Upper Blue Diamond Wash and Diversion Channel.

### **40. TUCSON DIVERSION CHANNEL (RECREATION DEVELOPMENT), AZ**

**Location.** The Tucson Detention Basin and Diversion Channel are located in southeast Arizona. The project area

initiates within the basin and proceeds approximately five miles downstream until it meets Interstate 19.

**Existing project.** The recreational development consists of a bicycle and hiking trail; four rest areas at the basin's inlet and outlet areas, near the intersection of Park Avenue and Ajo Way, across the street from Wakefield Middle School and near Interstate 19, where the project ends; four channel under crossing areas at Ajo Way (near the basin's outlet), Interstate 10; Kino Parkway; and Benson Highway; a restroom facility and five to seven car parking area located near the end of the project area; lighting at rest areas; benches; pedestrian bridges; and landscaping. The flood control channel maintains a 30-40 foot width, with a average 30-foot right-of-way on each side of the channel. The trail system is primarily located along the north bank of the channel.

**Local cooperation.** Pima County is the local sponsor.

**Operations during fiscal year.** None.

#### 41. TUCSON DRAINAGE AREA, AZ

**Location.** Project is located along Tucson Arroyo/Arroyo Chico watershed, within the Tucson city limits in Arizona.

**Existing project.** Both the reconnaissance report and the feasibility study identified the Tucson Arroyo/Arroyo Chico watershed area (approximately 11.4 square miles) as the major drainage channel within downtown Tucson. The recommended plan has two main features consisting of two detention basin complexes - one on Arroyo Chico in the headwaters of the drainage area (referred to as Randolph Golf Course Detention Basin Complex), and one on Tucson Arroyo/Arroyo Chico in the approximate center of the watershed (referred to as Park Avenue Detention Basin Complex). The local sponsor completed the Randolph Golf Course Detention Basin Complex in May 1996 using Section 104 credit consideration.

**Local cooperation.** Pima County Flood Control District and the Corps of Engineers executed the Design Agreement on May 3, 1999.

**Operations during fiscal year.** Completed Internal Technical Review of intermediate P&S phase II. Completed LEERDS acquisition.

#### 42. WHITLOW RANCH DAM, QUEENS CREEK, AZ

**Location.** Fifty miles southeast of Phoenix, AZ in Pinal County, on Queen Creek, Arizona a tributary of Gila River, about 10 miles west of Superior, Arizona.

**Existing project.** For details see page 33-10 of Annual Report 1981. Project element earthfill Dam, circular conduit outlet works and reservoir.

**Local cooperation.** Fully complied with.

**Operations during fiscal year.** Routine operations and maintenance activities were performed. A Periodic Inspection was conducted Total O&M, General obligations were \$400,618. Project condition is good.

#### 43. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Inspection of 9 completed local flood control projects consisting of the following: 375 miles of channels, six dams, and appurtenances, and 23 debris basins. See Table 33I. Obligations for: Arizona - \$71,996, California - \$643,392, and Nevada - \$33,977. Total O&M, General obligations were: \$749,365.

#### 44. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS

In accordance with Section VII, Flood Control Act of 1944, studies of reservoir operations for flood control were conducted; and preparation of regulations for the use of storage allocated for flood control was continued. The flood control structures were Hoover, Twitchell, and Tat Momolikot Dams. Obligations for: Arizona - \$21,559, California - \$156,591. Total O&M, General obligations were \$178,150.

#### 45. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

**Flood Control Activities Pursuant to Section 205 of the 1948 Flood Control Act, Public Law 858, 80th Congress, as Amended:**

Federal cost for Section 205 was \$729,475 of which \$719,659 was used for studies and \$9,816 for Coordination Account. See Table 33-J for list of projects.

**Emergency Streambank Protection Activities Pursuant to Section 14 of the 1946 Flood Control Act, Public Law 526, 79th Congress, as Amended**

Federal cost for Section 14 was \$60,745 of which \$55,728 was used for studies and \$5,017 for Coordination Account.

**Snagging and Clearing Navigable Streams and Tributaries in interest of Flood Control, Section 208, 1954**

## **REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FISCAL YEAR 2003**

### **Flood Control Act, Public Law 780, 83d Congress.**

Federal cost for Section 208 was \$0.

### **Modifications to Structures and Operations of Constructed Corps Projects to Improve the Quality of the Environment, Pursuant to Section 1135 of the 1986 Water Resources Development Act, Public Law 662, 99th Congress, as amended.**

Federal cost for Section 1135 was \$1,490,803 of which \$1,475,947 was for studies and \$6,374 for Coordination activities and \$8,482 Preliminary Restoration Plan.

### **Aquatic Ecosystem Restoration Pursuant to Section 206 of Water Resources Development Act of 1986**

Federal cost for Section 206 was \$829,057 of which \$8,368 was Coordination Account and \$32,275 was Preliminary Restoration Plans and \$788,414 for Studies.

## **46. EMERGENCY RESPONSE ACTIVITIES - FLOOD CONTROL AND COASTAL EMERGENCIES**

Emergency Flood Control Activities - repair, flood fighting, and rescue work (Public Law 99, 84th Cong., and antecedent legislation).

**A. Disaster:** This program encompasses all the activities associated with preparedness, which includes preparation of plans and policy documents, exercises, training, coordination with outside agencies and governments, maintaining supplies and equipment, and the like.

**B. Operational Program Areas:** Fiscal Year cost for disaster preparedness was \$564,433; emergency operations cost was \$2,589; rehabilitation cost \$103,080.

### **C. Emergency Work in Support of Other Federal Agencies.**

Support work was performed for Federal Emergency Management Agency (FEMA) following wildfires in Arizona and the typhoon in Guam at a cost of \$48,153.

## **Environmental Improvements**

### **47. CAMBRIA SEAWATER DESALINATION, CA**

**Location:** The project area is located in San Luis Obispo County, California approximately 230 miles north of Los Angeles, CA.

**Existing project.** The Cambria Community Services District

(CCSD) plans to build a desalination plant to ensure adequate water supply. Their current water sources are wells in shallow aquifers and are unable to provide a reliable water source, particularly during dry weather. The proposed work includes design refinement, permitting and Environmental Impact Statement/Environmental Impact Report and construction.

**Local Cooperation.** Cambria Community Services District.

**Operations during fiscal year.** The Project Cooperation Agreement, Project Management Plan and the Decision Document Report sent to sponsor for review.

### **48. CITY OF SANTA CLARITA (PERCHLORATE), CA**

**Location.** The project is located within the Santa Clarita Valley in the northern part of Los Angeles County, CA.

**Existing project.** The main objective of the study is to evaluate the existing aquifer conditions of the Santa Clarita Valley Saugus area and develop alternatives for long-term solutions to restoring the perchlorate impacted aquifer to drinking water quality. The study will include source identification, defining the nature and extent of contamination, aquifer characterization, evaluation of alternative well sites, groundwater modeling, and evaluation of long-term treatment technology solutions.

**Local cooperation.** The Federal Cost Sharing Agreement was executed in April 2002 with the Castaic Lake Water Agency.

**Operations during fiscal year.** The study installed over 8,500 feet of soil borings that were constructed into 4 multi-port monitoring wells and 7 single screened monitoring wells that total 41 sampling locations. The deepest well extended 1,600 feet below ground surface. Groundwater data was collected from each well and each multi-port sampling location. The data collected provided important insight into the aquifer conditions and localized areas of extreme contaminate impact from perchlorate in the local aquifer.

### **49. HARBOR-SOUTH BAY WATER RECYCLING, CA**

**Location.** The project area is located in the South Bay area of Los Angeles County, CA encompassing cities of Los Angeles, Compton, Carson, Gardena, Inglewood, Hawthorne, Torrance, Redondo Beach, Palos Verdes, Rolling Hills, and Ranch Verde Estates.

**Existing project.** The project is part of the West Basin Municipal Water District's recycled water distribution system expansion, which will serve recycled wastewater to numerous local cities. The project will include the design and

construction of over 30 miles of recycled water pipeline and distribution facilities. The project features are classified into 12 laterals and associated distribution/operational facilities to be designed and constructed.

**Local cooperation.** The local sponsor is the West Basin Municipal Water District.

**Operations during fiscal year.** Completed construction of Victoria Lateral and CSUDH Lateral (City of Carson) and design for Dye House Area Lateral.

## 50. NORTH VALLEY REGIONAL WATER INFRASTRUCTURE , CA

**Location.** The project is located in the city of Lancaster, about 50 miles northeast of Los Angeles, in Los Angeles County.

**Existing project.** The project will provide critically needed water facilities to the northern sector of the Antelope Valley region. The project will include design and construction of approximately 8.5 miles of 36-inch diameter water main and related facilities to serve this part of the city.

**Operations during fiscal year.** Initiated preparation of the Project Cooperation Agreement by the Corps and the scope of work by Sponsor.

## 51. RIO SALADO PHOENIX & TEMPE REACHES, AZ

**Location.** Phoenix Reach is located along 5 miles of the Salt River, from Interstate 10 Bridge to 19<sup>th</sup> Avenue in Phoenix, AZ. The project area for Tempe Reach is located along 1.3 miles of Indian Bend Wash, from McKellips Road downstream to confluence with Salt River in Tempe, Arizona.

**Existing project.** Two sites have been identified with a Federal interest in environmental restoration involving riparian habitat restoration, water quality improvement and recreation that are incidental or complimentary to the primary project purpose. The first site is 1.5 miles of Indian Bend Wash, from McKellips Road downstream to the confluence with the Salt River in Tempe; the second site is located along 5 miles of the Salt River, from the Interstate 10 Bridge to 19<sup>th</sup> Avenue in Phoenix.

**Operations during fiscal year.** Phoenix Reach: Completed design for the Water Supply Maintenance Road March 200e and phase 2 June 2003. Tempe Reach: Initiated construction on Indian Bend Wash Aug 2003 and initiated design of phase 2 (downstream Salt River Reach) Sep 2003.

## 52. RURAL NEVADA, AZ

**Location.** Rural Nevada project includes Boulder City, Mesquite, and Moapa, Nevada. Boulder City is located approximately 25 miles southeast of the city of Las Vegas, Nevada. Mesquite is located approximately 70 miles northeast of the city of Las Vegas, Nevada. The city of Moapa is located approximately 35 miles northeast of the city of Las Vegas, Nevada.

**Existing project.** Boulder City project is focused on renovation of three existing pump stations and several miles of force main in Hemanway Valley. This project will protect against accidental discharge of untreated wastewater into the watershed of Lake Mead National Recreation Area and Lake Mead. The Mesquite project is focused on development of a multi-purpose water resource project, to include flood control, retention facilities, water supply, environmental restoration, and sediment control. Phase 1 will include the construction of a wastewater tertiary treatment system to enhance the existing system and include the design work on phases 2 and 3. Phase 2 will include the construction of detention facilities at Pulsipher Wash. Phase 3 will include the construction of retention facilities at Abbott Wash. The Moapa project consists of design and construction of monitoring wells to determine the potential of this area to supplement current water supply. The design and construction of an inter-connect pipeline to the neighboring Coyote Springs Wash Basin is being considered with the total scope of the Project.

**Local cooperation.** The sponsors for these projects are city of Boulder City, Nevada, the city of Mesquite, Nevada, and the city of Moapa, Nevada.

**Operations during fiscal year.** Reimbursed sponsor 75% for costs to initiate construction pf Pulsipher water retention and reuse facilities and design of phase 3 Abbott water retention and reuse facilities.

## 53. SAN GABRIEL BASIN RESTORATION, CA

**Location.** San Gabriel Groundwater basin lies within the San Gabriel alley at the foot of the San Gabriel Mountains in eastern Los Angeles County, CA. The area covers approximately 200 square miles.

**Existing project.** The project includes construction of the water treatment facilities to cleanup groundwater contaminations.

**Local cooperation.** San Gabriel Basin Water Authority is the local sponsor.

## **REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FISCAL YEAR 2003**

**Operations during fiscal year.** None

**General Investigations**

### **54. SOUTH PERRIS, CA**

**Location.** The project is located in Perris, Riverside County, California.

**Existing project.** The project involves the design and construction of a reverse osmosis desalination plant, wells, pipelines and brine management pipelines required for the phased implementation of the Perris Basins Desalination Program.

**Local cooperation.** Local Sponsor, Eastern Municipal Water District, EMWD, signed a designed agreement on September 3, 2003. The Project Cooperation Agreement has not yet started.

### **55. TRES RIOS, AZ**

**Location.** Project is located within the Phoenix metropolitan area of Maricopa County and includes a nine-mile reach of the Salt and Gila Rivers beginning at 83<sup>rd</sup> Avenue and continuing downstream to the confluence with the Agua Fria River.

**Existing project.** The feasibility report was completed in May 2000. The recommended plan will address flood control and riparian habitat restoration. The benefits of environmental restoration would be the potential for 1,200 acres of riparian and wetland habitats to be restored.

**Local cooperation.** A Design Agreement was executed with the city of Phoenix and the Sub-Regional Operating Group in January 2001.

**Operations during fiscal year.** Continued the design of the flood control levee and initiated engineering and design of the pump station wetlands.

### **56. UPPER NEWPORT BAY HARBOR, CA**

**Location.** The authorized restoration project is located about 40 miles southeast of Los Angeles and covers the upper bay ecological reserve.

**Existing project.** The project includes dredging the access channels and two sediment basins toward providing restoration measures to the degraded habitat areas and re-establishing wetland and wildlife habitat areas.

**Local cooperation.** Orange County State of California Fish and Game.

**Operations during fiscal year.** Continued design, initiated draft Project Cooperation Agreement.

### **57. SURVEYS**

Total Fiscal Year costs were \$11,125,585 of which \$926,707 was for navigation studies; \$225,332 was for flood damage prevention studies; \$1,654,416 was for shoreline protection studies; \$8,101,406 was for special studies; \$0 for review of completed projects; \$128,658 was for Miscellaneous Activities (includes \$72,060 for special investigations; \$3,704 for FERC licensing activities; \$47,024 for Interagency Water Resources Development; \$3,762 for National Estuary Studies; \$2,108 for North American Waterfowl Management Plan); and \$89,066 for Coordination Studies with other Agencies and Non-Federal Interests, (\$61,879 was for Planning Assistance to States \$5,128 for Arizona, and \$56,751 for California).

### **58. COLLECTION AND STUDY OF BASIC DATA**

Fiscal Year costs totaling \$208,727 were associated with the following tasks under the Flood Plain Management Services Program, FPMS Unit \$32,700; Technical Services \$41,678; Quick Responses \$6,065; and Special Studies \$81,134 and \$47,150 for hydrologic studies.

### **59. PRECONSTRUCTION ENGINEERING AND DESIGN**

Fiscal Year expenditures were \$1,139,410 of which \$51,460 was for projects not yet authorized for construction and \$1,087,950 was for fully authorized projects.

#### **59A. SANTA BARBARA STREAMS, LOWER MISSION CREEK, CA**

**Location.** Located in Santa Barbara County about 100 miles northwest of Los Angeles, CA.

**Existing project.** The feasibility report was completed in Sep 2000.

**Local cooperation.** The city of Santa Barbara and the Santa Barbara County Flood Control and Water Conservation District, the local sponsors, expressed support for the project in September 2000.

**Operations during fiscal year.** Executed Design Agreement in April 2003. Initiated PED and conducted engineering scope meeting and prepared scope of work for Design Documentation Report. Awarded HTRW investigation contract, mapping contract and tidewater Goby genetic study contract.

#### **59B. WHITEWATER RIVER BASIN, CA**

## LOS ANGELES, CA, DISTRICT

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**Location.** Project is located in Coachella Valley, and runs along cities of Palm Springs, Rancho Mirage, Palm Desert, Thousand Palms, Desert Hot Springs and other communities.

**Existing project.** The Feasibility study was completed in Oct 2000. Alternative 6 recommended project consists of constructing four levees to provide protection for the southern portion of the alluvial fan.

**Local cooperation.** Coachella Valley Water District and the Corps of Engineers executed the Design Agreement on August 14, 2001.

**Operations during fiscal year.** Completed preliminary hydraulic design and initiated sediment transport study.

1.	Channel Islands, CA	Maint: Approp.	1,060,000	2,886,549	885,000	3,375,450	53,778,184
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TABLE 33-A

## COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY00	FY 01	FY02	FY 03	Total Cost 30 Sep 03
		Cost	1,064,207	2,884,804	876,954	3,388,509	53,776,282
2.	Imperial Beach, CA	New Work:					
		Approp.	244,000	157,000	431,900	195,000	4,331,808
		Cost	137,434	281,688	460,683	153,903	4,152,806
3.	Los Angeles and Long Beach Harbor, CA	New Work:					
		Approp.	-13,000	1,662,000	0	0	113,064,000 <sup>1/</sup>
		Cost	405,352	1,716,869	915	0	113,047,522
		Maint:					
		Approp.	620,000	4,991,592	4,747,000	249,820	27,952,254
		Cost	662,713	4,929,691	4,718,891	304,555	27,910,984
	Model Study:	Maint:					
		Approp	160,000	163,634	163,000	156,500	10,192,021
		Cost	158,367	163,409	164,451	156,877	10,191,950
4	Port of Los Angeles Main Channel Deepening, CA	New Work:					
		Approp.	0	672,000	2,894,063	18,097,686	21,752,749
		Cost	0	300,851	2,562,675	18,365,859	21,229,385
5.	Marina del Rey, CA	Maint:					
		Approp.	3,193,000	622,528	33,000	38,000	18,119,335
		Cost	3,254,931	604,022	41,731	40,589	18,111,920
6.	Morro Bay Harbor, CA	New Work:					
		Approp	0	0	-49,000	0	1,475,000
		Cost	0	0	0	0	1,474,261
		Maint:					
		Approp.	3,383,000	2,215,484	3,247,000	1,153,000	34,175,955
		Cost	3,434,179	2,197,729	3,246,773	1,160,560	34,161,085
7.	Newport Bay Harbor, CA	Maint:					
		Approp.	39,000	35,914	329,000	1,240,100	6,167,714
		Cost	39,200	41,790	298,894	1,232,936	6,127,970
8.	Oceanside Harbor, CA	New Work:					
		Approp.	0	0	0	0	3,496,938 <sup>2/</sup>
		Cost	0	0	0	0	3,496,938
		Maint:					
		Approp.	1,140,000	1,167,624	1,143,000	1,172,300	18,207,711
		Cost	1,155,433	1,140,911	1,163,868	1,173,434	18,200,677
9.	Oceanside Harbor Sand By-Pass, CA	Maint:					
		Approp.	134,000	0	0	0	23,490,900
		Cost	203,139	176	0	0	23,490,900
10.	Port Hueneme, CA	Maint:					
		Approp.	1,422,000	0	13,000	18,610	3,087,710
		Cost	1,410,006	12,807	12,989	18,436	3,087,345
11.	Port of Long Beach, CA	New Work:					
		Approp	-1,047,000	2,200,000	-38,000	69,400	14,386,400 <sup>3/</sup>
		Cost	5,858,648	2,083,333	103,010	75,171	14,342,322



TABLE 33-A

## COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 00	FY 01	FY02	FY 03	Total Cost 30 Sep 03
12.	Redondo Beach (King Harbor)	Maint: Approp. Cost	-4,000 6,111	0 0	0 0	0 0	6,668,647 6,668,647
13.	San Diego Harbor, CA	Maint: Approp. Cost	0 2,355	0 0	95,000 94,233	115,800 116,649	5,712,991 5,712,973
14.	San Diego River and Mission Bay, CA	New Work: Approp. Cost	0 424	0 246	-3,000 0	0 0	7,881,345 7,878,151
		Maint: Approp. Cost	33,000 36,142	20,000 20,000	90,000 77,615	139,800 146,850	6,114,042 6,108,707
15.	Santa Barbara Harbor, CA	Maint: Approp. Cost	1,083,000 1,087,088	1,071,527 1,068,163	1,938,000 1,933,627	1,135,800 1,144,366	28,752,068 28,751,017
		New Work: Approp. Cost	10,000 4,766	0 4,968	5,000 5,188	0 0	415,000 414,269
16.	Santa Monica Breakwater, CA	New Work: Approp. Cost	-135,000 21,536	7,000 7,113	0 0	0 4,388	407,000 <u>9/</u> 368,329
17.	Surfside, Sunset and Newport Beach, CA	New Work: Approp. Cost	292,000 242,918	1,385,000 277,671	3,640,900 4,763,672	(46,000) 63,492	26,681,000 26,677,464
18.	Ventura Harbor (Ventura Marina), CA	New Work: Approp. Cost	0 0	0 0	0 0	0 0	5,286,213 5,286,213
		Maint: Approp. Cost	2,471,000 2,488,326	3,759,603 3,759,886	3,662,000 3,628,395	4,781,800 4,797,828	56,892,735 56,873,386
19.	Alamo Dam, AZ	Maint: Approp. Cost	958,000 990,791	991,493 1,007,139	956,150 960,361	1,109,200 1,109,949	21,662,702 21,657,510
20.	Clifton, AZ	New Work: Approp. Cost	370,000 593,506	285,000 309,565	1,502,000 1,499,188	0 23,492	16,112,000 <u>4/</u> 16,087,673
21.	Hansen Dam, LACDA, CA (Recreation)	Maint: Approp. Cost	0 121,150	25,000 50,047	2,972,000 2,924,391	3,214,000 155,690	9,217,192 6,154,192
22.	Holbrook, AZ	New Work: Approp Cost	0 1,362	0 0	(37,000) 1,042	8,000 8,349	10,812,787 10,797,832
23.	Los Angeles County Drainage	New Work: Approp	35,475,300	14,422,000	4,340,800	551,000	152,089,900 <u>5/</u>

LOS ANGELES, CA, DISTRICT

TABLE 33-A

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY00	FY 01	FY02	FY 03	Total Cost 30 Sep 03
	Area, CA	Cost	33,273,990	14,248,683	7,264,589	1,051,533	151,865,059
		Maint:					
		Approp.	6,176,000	7,973,493	5,331,633	5,586,847	122,088,496
		Cost	6,277,137	7,944,274	5,444,538	5,596,147	122,044,895
24.	Los Angeles River, Sepulveda to Arroyo Seco, CA (Recreation)	Maint					
		Approp.	0	0	0	0	400,000
		Cost	4,674	0	0	0	400,000
25.	Mojave River Dam, Mojave River Basin, CA	Maint:					
		Approp.	213,000	142,460	144,000	245,100	6,730,096
		Cost	221,164	144,542	145,525	246,252	6,729,529
26.	Murrieta Creek, CA	New Work:					
		Approp.	0	748,000	0	1,059,000	1,807,000
		Cost	0	463,090	271,987	1,088,378	1,823,455
27.	Nogales Wash, AZ	New Work:					
		Approp.	0	25,000	287,000	193,000	1,097,200 6/
		Cost	15,142	65,207	215,508	241,455	1,069,606
28.	Norco Bluffs, CA	New Work:					
		Approp.	2,404,000	-312,000	67,100	1,298,000	9,037,100
		Cost	4,826,561	338,102	188,827	1,129,317	8,829,344
29.	Painted Rock, AZ (Gila River)	Maint:					
		Approp.	749,000	830,450	722,000	1,081,600	30,625,233
		Cost	835,873	835,697	725,681	1,084,968	30,619,870
30.	Pine & Mathews Canyons Dam, Colorado River	Maint:					
		Approp.	169,000	55,585	128,000	171,400	3,263,314
		Cost	178,607	51,051	128,015	177,408	3,262,191
31.	Rillito River, AZ	New Work:					
		Approp.	2,090,000	300,000	119,200	(3,700)	28,062,500 7/
		Cost	3,261,442	316,316	178,046	27,178	28,061,699
32.	Rio de Flag, Flagstaff, AZ	New Work:					
		Approp.	0	471,000	0	801,000	1,272,000
		Cost	0	306,175	73,081	832,006	1,211,262
33.	Santa Ana River Mainstem, CA	New Work:					
		Approp.	37,787,700	18,293,000	17,145,200	16,994,000	718,089,900
		Cost	40,442,313	18,936,338	12,371,330	24,474,554	705,480,568
34.	Santa Ana River Basin OC, CA	Maint:					
		Approp.	2,795,000	4,280,363	3,588,000	2,915,000	64,608,857
		Cost	2,890,071	4,302,566	3,595,862	2,900,420	64,578,277
35.	Santa Paula Creek, CA	New Work:					
		Approp.	7,745,000	3,515,000	3,566,000	144,000	39,575,020
		Cost	9,938,532	2,932,653	5,400,610	153,754	39,560,389
36.	San Luis Rey River, CA	New Work:					
		Approp.	1,850,000	210,000	404,000	925,000	60,680,000
		Cost	2,000,129	421,054	373,978	1,074,003	60,587,797
37.	Sepulveda Dam, CA, (Recreation)	Maint:					
		Approp.	40,000	15,000	0	0	16,815,940

LOS ANGELES, CA, DISTRICT

TABLE 33-A

COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY 00	FY 01	FY02	FY 03	Total Cost 30 Sep 03
		Cost	267,035	97,225	7,303	1,377	16,814,162
38.	Sweetwater River Basin, CA	New Work: Approp. Cost	0 0	0 908	0 0	0 0	37,082,503 37,082,491
39.	Tropicana and Flamingo Washes, NV	New Work: Approp. Cost	28,110,000 30,756,251	19,502,000 20,147,135	28,842,000 29,607,702	34,151,000 34,150,311	173,403,000 11/ 138,783,617
40.	Tucson Diversion Channel, AZ (Recreation)	Maint: Approp. Cost	0 5,199	0 2,230	0 0	(56,000) 72,601	2,994,000 3,122,522
41.	Tucson drainage Area, CA	New Work: Approp Cost	319,000 415,312	700,000 648,530	0 78,020	1,099,000 949,605	2,298,000 2,143,321
42.	Whitlow Ranch Dam, Queen Creek, AZ	Maint: Approp. Cost	128,000 129,412	120,639 121,734	128,000 127,538	400,000 400,618	2,800,489 2,800,166
47.	Cambria Seawater Desalination, CA	New Work: Approp. Cost	0 0	0 0	41,500 41,165	9,000 8,054	50,500 49,219
48.	City of Santa Clarita (Perchlorate), CA	New Work Approp. Cost	0 0	0 0	406,000 325,002	2,329,204 2,334,055	2,735,204 2,659,057
49.	Harbor-South Bay Water Recycling, CA	New Work: Approp. Cost	0 0	1,676,000 101,090	1,740,000 652,057	2,875,000 4,691,956	6,291,000 5,445,103
50.	North Valley Regional Water Infrastructure, CA	New Work: Approp Cost	0 0	0 0	0 0	20,000 19,584	20,000 19,584
51.	Rio Salado, Phoenix & Tempe Reach, AZ	New Work: Approp. Cost	1,628,000 1,864,560	1,996,000 564,664	10,456,100 6,594,304	8,053,500 12,259,645	20,505,600 19,313,010
52.	Rural Nevada, NV Cost	Maint: Approp. 0	0 27,047	28,000 610,062	645,000 1,744,298	1,170,000 2,381,407	2,383,000
53.	San Gabriel Basin Restoration, CA	Maint: Approp. Cost	0 0	1,951,000 64,791	0 293,546	(1,493,204) 94,332	(820,204) 731,441
54.	South Perris, CA	New Work: Approp Cost	0 0	0 0	0 0	214,000 48,594	214,000 48,594
55.	Tres Rios, AZ	New Work: Approp	43,000	500,000	945,000	815,000	2,303,000

TABLE 33-A

## COST AND FINANCIAL STATEMENT

See Section in Text	Project	Funding	FY00	FY 01	FY02	FY 03	Total Cost 30 Sep 03
		Cost	42,238	471,492	839,252	743,706	2,096,688
56.	Upper Newport Bay Harbor, CA	New Work:					
		Approp	0	50,000	670,000	447,000	1,167,000
		Cost	0	35,187	521,264	435,829	992,280
<b>PRECONSTRUCTION ENGINEERING AND DESIGN</b>							
59A.	Santa Barbara Streams Lower Mission Creek, CA	New Work:					
		Aprop.	0	0	36,000	460,000	496,000
		Cost	0	0	15,476	367,644	383,120
59B.	Whitewater River Basin, CA	New Work:					
		Aprop.	0	135,000	288,905	348,000	771,905
		Cost	0	0	59,304	312,813	372,117

## FOOTNOTES:

- 1/ Excludes non-Federal funds and costs; includes PED appropriation of \$4,090,000 and cost of \$3,833,223.
- 2/ Excludes non-Federal sponsors funds \$1,913,000 and cost of \$1,685,758; includes PED Work Allowance of \$647,000 and cost of \$647,000.
- 3/ Excludes non-Federal funds and costs; includes PED appropriation of \$750,000 and costs of \$739,000.
- 4/ Excludes non-Federal funds \$376,000 and cost of \$367,712; includes PED appropriation \$1,600,000 and cost of \$1,600,000.
- 5/ Includes PED Work Allowance of \$9,650,000 and cost of \$9,648,146. Excludes non-Federal Work Allowance of \$6,191,000 and cost of \$4,299,586.
- 6/ Excludes non-Federal funds and costs. Excludes PED appropriation and cost due to portions of the project reclassified to "Deferred" and "inactive" categories.
- 7/ Excludes non-Federal funds and costs; includes PED appropriation \$3,825,000 and cost of \$3,825,000
- 8/ Excludes non-Federal funds and costs; includes PED appropriation \$25,643,000 and costs of \$25,643,000.
- 9/ Excludes non-Federal funds and costs; includes PED appropriation \$225,000 and costs of \$224,756.
- 10/ Excludes non-Federal funds and costs; includes PED appropriation \$180,000 and costs of \$78,176.
- 11/ Excludes non-Federal funds and costs; includes PED appropriation of \$ 7,174,000 and costs of \$7,174,000

**LOS ANGELES, CA, DISTRICT**

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
1.	Sep 3, 1954	<b>CHANNEL ISLANDS HARBOR, CA</b> Harbor for light-draft vessels and shore protection works.	H.Doc.362, 83d Cong., 2d sess.
2.	Jul 3, 1958	<b>IMPERIAL BEACH, CA</b> Beach erosion control.	River and Harbor Act, Sec 101; PL 85-500 IAW H.Doc.399, 84 <sup>th</sup> Cong., 2d sess.
3.	June 3, 1988	<b>LOS ANGELES AND LONG BEACH HARBORS, CA</b> A breakwater 8,500 feet long, east of Point Fermin.	S.Doc.18, 55th Cong., 1st sess.
	June 25, 1896	Extend said breakwater to shore, making a total length of 11,152 feet from Point Fermin.	H.Doc. 969, 60th Cong., 1st sess.
	July 25, 1912	Dredge Los Angeles outer harbor west of entrance channel.	Rivers and Harbors Committee Doc.8, 62d Cong., 2d sess.
	Aug. 8, 1917	For silt-diversion works.	Rivers and Harbors Committee Doc.9, 64th Cong., 2d sess.
	Sep. 22, 1922	Triangular area approach to Los Angeles inner harbor entrance channel.	H.Doc. 1013, 66th Cong., 3d sess.
	Mar 3, 1925	Dredge Los Angeles Harbor main channel and entrance 35 feet deep and 1,000 feet wide; dredge inner harbor turning basin 35 feet deep; and reclamation of Reservation Point.	H. Doc.349, 68th Cong., 1st sess.
	July 3, 1930	A detached breakwater 12,500 feet long in prolongation of existing breakwater (authorized by act of 1896).	Rivers and Harbors Committee Doc.33, 71st Cong., 2d sess.
		Widen fairway on east side of entrance to Los Angeles inner harbor; dredge a channel 35 feet deep and 400 feet wide in Cerritos channel from U.S. station 406 to Long Beach turning basin; entrance channel to Long Beach Harbor 35 feet deep and 500 feet wide; and maintenance of the Long Beach breakwater south of outer end pier A. This act provides that in no case shall dredging be done within 50 feet of established pierhead lines of existing piers and wharves.	S.Doc.130, 71st Con., 2d sess.
	Aug 30, 1935	Dredge 1,000-foot wide entrance channel to Los Angeles outer harbor to 40-foot depth and a turning basin 3,500 feet long and 1,500 feet wide to same depth; and enlarge entrance to inner harbor by dredging to 35-foot depth a triangular area at its junction with turning basin.	S.Committee print, 74th Cong., 1st sess.
	Oct 17, 1940	Dredge to a depth of 40 feet area A and B adjacent to 40-foot-depth entrance channel; construct and maintain a rubble mound breakwater of composite type 21,000 feet long in eastward therefrom to Belmont pier; maintenance dredging of A and B, and at mouth of Los Angeles River diversion channel; all subject to such modifications as in discretion of the Chief of Engineers may be advisable to meet requirements of the Navy.	H.Doc.843, 76th Cong., 3d sess

**LOS ANGELES, CA, DISTRICT**

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
	Sep 3, 1954	Dredge to a depth of 35 feet in West Basin as a modification of existing project. This act provides that the Secretary of the Army is authorized to reimburse local interests for work they have done upon this project prior to July 1, 1953, at actual cost to local interests so far as same shall be approved by Chief of Engineers and found to have been done in accordance with the project hereby adopted and that such reimbursement shall be subject to appropriations applicable thereto or funds available therefore and shall not take precedence over other pending projects of higher priority for harbor improvements; and that such payments shall not exceed \$500,000.	H. Doc. 161, 83d Cong., 1st Sess
	July 14, 1960	Dredge to a depth of 35 feet in West Basin as a modification of existing project.	H.Doc.401,86th Cong., 2d sess.
	Oct 22, 1976	Dredge Los Angeles Harbor entrance channel 45 feet deep, 1,000 feet wide, and about 5,500 feet long; Los Angeles channel 45 feet deep, 750 feet wide, and about 12,500 feet long; inner harbor turning basin 45 feet deep, 1,350 feet wide, and about 1,650 feet long; East Basin channel 45 feet deep, 400 feet wide, and about 6,000 feet long; West Basin 45 feet deep, from 350 to 1,350 feet wide, and about 3,800 feet long; and East Basin 45 feet deep, from 400 to 950 feet wide, and about 2,000 feet long. This act provides that no dredging shall be done within 125 feet of established pier head lines, wharves, or other structures.	H.Doc.401,86th Cong., 2d sess.
	Oct 17, 1986	Deepen the entry channel to the Los Angeles Harbor and Long Beach Harbor to 70 feet and 76 feet respectively, including the creation of 800 acres of land from the project.	WRDA 86, Sec 201.
	Nov 17, 1988	If non-Federal interest carry out any work associated with such project which is later recommended by the Chief of Engineers and approved by the Secretary, the Secretary may credit such non-Federal interest an amount equal to the Federal share of the cost of such work, without interest.	WRDA 88, Sec 4
	Nov 28, 1990	Section 4(d) of WRDA 1988 (102 Stat. 4015) is amended by inserting after "approved by the Secretary" in the first sentence the following: "or which is carried out after approval of the final report by the Secretary and which is determined by the Secretary to be compatible with the project".	WRDA 90, Sec 102
	Sep 25, 1996	The sewer outfall relocated by the Port of Los Angeles at a cost of approximately \$12,000,000 shall be considered to be a relocation. The cost of such relocation shall be credited as a payment provided by the non-Federal interest.	WRDA 96 Sec 307

LOS ANGELES, CA, DISTRICT

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
	Oct 31, 2000	The project for navigation, Los Angeles Harbor, California, at a total cost of \$153,313,000, with an estimated Federal cost of \$43,735,000 and an estimated non-Federal cost of \$109,578,000.	WRDA 2000, Sec 101(b)(5)
4.		<b>PORT OF LOS ANGELES MAIN CHANNEL DEEPENING, CA</b>	
	Oct 17, 1986	Deepen the entry channel to the Los Angeles Harbor.	WRDA 1986, Sec 201(b)
	Oct 31, 2000	Deepen the main channel from the current 45ft to 53ft.	WRDA 2000, Sec 101(b)(5)
5.		<b>MARINA DEL REY, LOS ANGELES COUNTY, CA</b>	
	Sep 3, 1954	Harbor for light-draft vessels.	H.Doc.389, 83d Cong., 2d sess.
	Sep 28, 1994	Determine advisable modifications in interest of navigation, hurricane and storm damage reduction, environmental restoration and disposal of contaminated sediments from the entrance channel at Marina Del Rey Harbor	Sec 216, Flood Control Act of 1970, supp. by House Resolution Sep. 28, 1994.
6.		<b>MORRO BAY HARBOR, CA</b>	
	Mar 2, 1945	Adoption and improvement of existing entrance channel to bay, a breakwater extending south by west from Morro Rock, and bay channels and basins at locations and of dimensions substantially as shown on the Navy Department map on file in the Office of the Chief of Engineers.	H.Doc.283, 77th Cong., 1st sess.
7.		<b>NEWPORT BAY HARBOR (&amp; REVIEW), CA</b>	
	May 22, 1991	Maintenance and improvement of main and inner channels.	Doc.PL99-662 (WRDA 1986, Sec841). R&H Acts 1937 & 1945 S. Doc. 138 78th Cong.
		Initiate feasibility phase studies re-environmental preservation benefits associated with modification of existing Federal project to extend channels into the Upper Newport Bay.	WRDA 1986, Sec. 841 (PL-9962)
8.		<b>OCEANSIDE HARBOR, CA</b>	
	Oct 27, 1965	Maintenance of general navigation features of Del Mar Boat Basin and of Oceanside Harbor.	H.Doc.76, 89th Cong., 1st sess.
	Oct 27, 1990	Navigation and storm damage reduction, repair, operate, and maintain the extension of south jetty.	PL 101-640 (WRDA 1990) WRDA 1992. PL 102-580
9.		<b>OCEANSIDE HARBOR SAND BY-PASS SYSTEM, CA</b>	
	May 22, 1991	Maintenance of general navigation features of Del Mar boat Basin and of Oceanside Harbor.	EWDA Act 1992
10.		<b>PORT HUENEME, CA</b>	
	Aug 13, 1968	Adoption and maintenance of existing harbor for deep-draft vessels; dredged central basin to 35 feet deep, and extend southern-most interior channel.	H.Doc.362, 90th Cong., 2d sess.
11.		<b>PORT OF LONG BEACH, CA</b>	
	Sep 25, 1996	Navigation project. The project for navigation, Port of Long Beach (Deepening), CA; Report of the chief of Engineers, dated July 26, 1996, at a total cost of \$37,288,000 with an estimated Federal cost of \$14,318,000 and an estimated non-Federal cost of \$22,970,000.	WRDA 1996, Sec 101(d) (4)

**LOS ANGELES, CA, DISTRICT**

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
12.	Mar 21, 1950	<b>REDONDO BEACH HARBOR (KING HARBOR), CA</b> Maintain harbor dredging and breakwaters.	R&H Act 1950 (H.Doc 303 81st Cong.) PL99-662 (WRDA 86, Sec 809), Amended in WRDA 1988.
	Oct 17, 1986 Oct 1988	Construct and maintain breakwater to height of 22 feet.	Authorized by Chief of Engineers.
13.	Mar 3, 1875	<b>SAN DIEGO HARBOR, CA</b> Diversion dike.	Annual Report. 1873; p.1-142
	Sep 19, 1890	Jetty on Zuniga Shoal.	H.Ex.Doc.177, 50th Cong., 1st sess. (Annual Report, 1888; p.2114).
	Jun 25, 1910	Dredge channel through outer bar 30 feet deep and 600 feet wide, and a channel through middle ground to 30 feet deep.	H.Doc.961, 60th Cong., 1st session.
	Mar 4, 1913	Dredge channel through outer bar 570 feet wide and 35 feet deep, and a channel through middle ground 32 feet deep.	H.Doc.1309, 62d Cong., 3d sess.
	Jul 27, 1916	Widen approach (area B) to San Diego municipal pier by dredging area C (north of area B).	H.Doc.648, 64th Cong., 1st sess.
	Aug 8, 1917	Dredging area A (south of area B).	Rivers and Harbors Committee Doc.8, 64th Cong., 2d sess.
	Aug 8, 1917	Dredge 35-foot channel through middle ground.	H.Doc.140, 65th Cong., 1st sess.
	Sep 22, 1922	Dredging areas D and E.	H.Doc.1000, 66th Cong., 3d sess.
	Mar 3, 1925	Widen approach (area C) to San Diego municipal pier 1 by dredging an portion of area F (north of area C).	River and Harbors Committee Doc.2, 68th Cong., 1st sess.
	Jul 3, 1930	Deepen to 40 feet channel through outer bar; along south and north banks, main channel; dredge turning basin, widen area H, and dredge a channel to National City and Chula Vista.	S.Doc.81, 71st Cong., 2d sess.
	Aug 30, 1935	Widen bay channel to 2,200 feet with depth of 35 feet from the vicinity of Whalers Bight in lower bay to Naval Air Station opposite turning basin.	H.Doc.223, 73d Cong., 2d sess.
	Aug 26, 1937	Dredging areas Q.Q-1, M, N, and O.	Rivers and Harbors Committee Doc.89, 74th Cong., 2d sess.
	Oct 17, 1940	Dredge a seaplane basin (area S.) of about 3,000 acres, 10 feet deep, and fill an area of about 110 acres adjacent to southern end of basin.	H.Doc.844, 76th Cong., 3d sess.
	Mar 2, 1945	Dredge triangular approaches to 26-and 35-foot anchorages, area M.	H.Doc.390, 77th Cong., 1st sess.
	Aug 13, 1968	Deepen and extend existing navigation channels, delete uncompleted parts, and extend maintenance.	H.Doc.365, 90th Cong., 2d sess.



**LOS ANGELES, CA, DISTRICT**

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
14.	Jul 24, 1946	<b>SAN DIEGO RIVER AND MISSION BAY, CA</b> Modification of existing flood control project for San Diego River, CA, to include a multiple-purpose project for flood control on San Diego River and small-boat navigation on Mission Bay.	H.Doc.760, 79th Cong., 2d sess.
15.	Aug 30, 1935	<b>SANTA BARBARA HARBOR, CA</b> Maintenance dredging present depths into harbor formed by breakwater constructed by local interests.	S.Committee Print, 73d Cong., 2d sess.
	Mar 2, 1945	Permits maintenance by means of a fixed sand-intercepting plant to be provided and operated by and at expense of local interests. United States to contribute to operating expense an amount not to exceed \$30,000 annually, whenever funds are allotted therefore; funds thus contributed to be reduced by actual cost of harbor maintenance if and when intercepting plant has been installed.	H.Doc.348, 77th Cong., 1st sess.
		Project for navigation; report of the Chief of Engineers, dated April 26, 1994	
	Oct 23, 1962	Modification of existing project.	H.Doc.518, 87th Cong., 2d sess.
	Dec 31, 1970	Dredging and maintenance by United States.	None.
	Sep 25, 1996	Complete plans and specifications.	Sec 101, H Doc 1160, Water Resources Project Authorization.
16.	Sep 25, 1996	<b>SANTA MONICA BREAKWATER, CA</b> Hurricane and storm damage reduction act.  The project for hurricane and storm damage reduction, Santa Monica Breakwater, Santa Monica, CA; Report of the chief of Engineers, dated June 7, 1996, at a total cost of \$6,440,000, with an estimated Federal cost of \$4,220,000 and an estimated non-Federal cost of \$2,220,000.	WRDA 1996, Sec 101(d) 7.
17.	Oct 23, 1962	<b>SURFSIDE, SUNSET &amp; NEWPORT BEACH, CA</b> Beach erosion.  Protective measures that comprise a protective and feeder beach at Surfside, and on offshore breakwater at Newport Beach to provide and impounding area from which sand would be dredged and returned periodically to the feeder beach, all substantially in accordance with the plan of the DE.	Sec 101 of R&H Act 1992.
18.	Aug 13, 1968	<b>VENTURA HARBOR (VENTURA MARINA), CA</b> Adoption and maintenance of existing general navigation features of harbor, excluding interior basins; construction of an offshore breakwater; dredging a sand trap in lieu of breakwater; repairing existing north and middle jetties; and construction of recreational fishing facilities on jetty crests.	H.Doc.356, 90th Cong., 2d sess.
	Nov 17, 1988	The Harbor commonly known as Ventura Marina, located in Ventura County, CA, and adopted and authorized by section 101 of Public Law 90-483, shall hereafter be known and designated as "Ventura Harbor".	Public Law 100-676.

LOS ANGELES, CA, DISTRICT

**TABLE 33-B**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
19.	Dec 22, 1944	<b>ALAMO LAKE, BILL WILLIAMS RIVER, AZ</b> Multiple-purpose dam and reservoir.	H.Doc.625, 78th Cong., 2d sess.
20.	Jan 3, 1996	<b>CLIFTON, AZ</b> Reauthorized the flood control project at a total cost of \$21,100,000.	WRDA 1996 Sec 301.
	Sep 25, 1990	Flood control.	WRDA 1990, Sec 101(3a) modified WRDA 1986.
21.	Oct 2, 1992	<b>HANSEN DAM, CA</b> Develop water conservation on existing spreading grounds.	PL 102-377 Energy & Water Appropriations Act, FY 1993.
22	May 22, 1991	<b>HOLBROOK, AZ</b> Flood prevention and protection.	WRDA 1986, PL 99-662, Sec 401.
23.	Jun 22, 1936	<b>LOS ANGELES COUNTY DRAINAGE AREA, CA</b> Reservoirs and flood channels for flood control and related purposes at an estimated construction cost not to exceed \$70 million.	None
	May 15, 1992		None
	Jun 28, 1936	Added flood channels on Ballona Creek and tributaries to project.	H. Doc. 838, 76th Cong., 3d Sess.
		Provision of lands, easements, and rights-of-way and relocations by Federal Government instead of by local interests. (Resultant Additional cost to the United States, \$12,541,000).	
	Aug 18, 1937	Project extended to include additional flood control reservoirs, flood control channels, and debris basins for flood control and related purposes. Also authorized to be appropriated \$25 million for further accomplishment of plan.	None

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
	Dec 22, 1944	Authorized to be appropriated an additional \$25 million for prosecution of comprehensive plan approved in Flood Control Act of Aug. 18, 1941.	None
	Jul 24, 1946	Authorized to be appropriated an additional \$25 million for further prosecution of comprehensive plan.	None
	May 17, 1950	Rio Hondo channel improvement, Whittier Narrows Reservoir to Los Angeles River (in lieu of enlarging channel and bridges on San Gabriel River Downstream from reservoir). Also authorized to be appropriated an additional \$40 million for further prosecution of comprehensive plan.	None
	Sep 3, 1954	Authorized to be appropriated an additional \$12,500,000 for further prosecution of comprehensive plan.	None
	Jul 3, 1958	Authorized to be appropriated an additional \$44 million for further prosecution of comprehensive plan.	None
	Jul 14, 1960	Authorized to be appropriated an additional \$32 million for further prosecution of comprehensive plan.	None
	Oct 23, 1962	Authorized to be appropriated an additional \$3,700,000 For further prosecution of comprehensive plan.	None
	Dec 30, 1963	Authorized to be appropriated an additional \$30 million for further prosecution of comprehensive plan.	None

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
	Nov 17, 1986	Authorized modifications of Hansen Dam by removing and selling dredged material to facilitate flood control, recreation, and water conservation.	None
	Nov 17, 1988	The Secretary may convey to the city of South El Monte, CA, approximately 7.778 acres of real property, together with improvements thereon, located within the Whittier Narrows Flood Control Basin.	None
	Oct 30, 1990	The project for flood control, Los Angeles County Drainage Area, California, at a total cost of \$327,000,000, with an estimated first Federal cost of \$163,500,000, with an estimated first Federal cost of \$163,500,000, is authorized to be prosecuted by the Secretary in accordance with a final report of the Chief of Engineers and with such modifications as are recommended by the Secretary. No construction on the project may be initiated until such a report of the Chief of Engineers is issued and approved by the Secretary.	WRDA 1990, Sec 101(b)(PL 101-640), Project Subject to Favorable Report of the chief of Engineers.
	Nov 28, 1990	Authorized project for flood control. Authorized by Chief of Engineers Report.	PL 101-640, WRDA 1990
24.	Jul 14, 1960	<b>LOS ANGELES RIVER (SEPULVEDA DAM TO ARROYO SECO), CA</b> Recreation development for bicycle/hiking trails along the upper Los Angeles River	Flood Control Act 1936, PL 77387 1941, PL 103-126
25.	May 17, 1950	<b>MOJAVE RIVER DAM, MOJAVE RIVER BASIN, CA</b> Dam and reservoir, and an earthfill dike.	H.Doc.164, 86th Cong., 1st sess.
		Evaluate opportunities for water conservation, environmental restoration, and enhanced flood control, along the Mojave River and Tributaries downstream of the dam.	HR 2479, Mar. 7, 1996
26.	Oct 31, 2000	<b>MURRIETA CREEK, CA.</b> The project is watershed management to include flood control, Environmental restoration, storm water retention, water conservation And supply and recreation.	WRDA 2000, Sec 101 (b) (6)
27.	Jun 20, 1989	<b>NOGALES WASH, AZ</b> Flood Control Protection and Flood Warning System.	Energy and Water Development Appropriation bill 1990, H.Doc2696, 101st Cong, 1st session
	Oct 27, 1990	Flood warning gauges in Mexico	WRDA 1990, Sec 101 (a)(4)
	Oct 12, 1996	Modifies Section 101(a)(4) of WRDA 1990 to direct the Secretary to permit the non-Federal contribution for the project to be determined in accordance with section 103 of WRDA 1986 and direct the Secretary to enter into negotiations with non-Federal interests pursuant to 103(l) of such Act concerning the timing of the initial payment of the non-Federal contributions.	WRDA 1996, Sec 303; Public Law 104-303
		Conduct a study of the relationship of flooding in Nogales and floodflows emanating in Mexico. Transmit a report, which includes a recommendation of the appropriate level of non-Federal participation in the authorized flood control project.	WRDA 1996, Sec 404; Public Law 104-303
	Oct 31, 2000	Modified to provide that the Federal share of the cost associated with addressing flood control problems in Nogales, Arizona, arising from floodwater flows originating in Mexico shall be 100 percent.	WRDA 2000, Sec 302

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
28.	Sep 25, 1996	<b>NORCO BLUFFS, CA</b> The project for bluff stabilization, Norco Bluffs, Riverside county, California, at a total cost of \$8,600,000, with an estimated Federal cost of \$6,450,000 and an estimated non-Federal cost of \$2,150,000.	WRDA 96, Sec 101(b)
29.	July 6, 1949	<b>PAINTED ROCK DAM (GILA RIVER), GILA RIVER BASIN, AZ</b> Dam and flood control basin.	H.Doc.331, 81st Cong., 1st sess.
30.	May 17, 1950	<b>PINE AND MATHEWS CANYONS DAMS, COLORADO RIVER BASIN, NV</b> Dams and flood control basins.	H.Doc.530, 81st Cong., 2d sess.
31.	Oct 17, 1986	<b>RILLITO RIVER, AZ</b> Flood damage protection.	WRDA 1986, PL 99-662, Section 601(a)
32.	June 20, 1989	Bank erosions control and flood protection.	Energy and Water Development Appropriations Act 1990
33.	Oct 31, 2000	<b>RIO DE FLAG, FLAGSTAFF, AZ</b> The project is for flood damage reduction. Total cost is \$24,100,000, with an estimated Federal cost of \$15,665,000 and an estimated non-Federal cost of \$8,435,000.	WRDA 2000, Sec 101 (b) (3).
34.	May 20, 1991	<b>SANTA ANA RIVER MAINSTEM, CA</b> Flood control along 75 miles reach of Santa Ana River, recreation development, and mitigation and preservation.	WRDA 19862 PL99-662, Energy and Water Development Act 1988, and WRDA 1988.
35.	Nov 28, 1990	The project for flood control, Santa Ana Mainstem, including Santiago Creek, CA, is modified to authorize the Secretary to develop recreational trails and facilities on lands between Seven Oaks Dam and Prado Dam, including flood plain management areas.	H.Doc 94-594, 94th Cong., 2d sess.
36.	Jun 22, 1936	<b>SANTA ANA RIVER BASIN (AND ORANGE COUNTY), CA</b> Reservoirs and flood channels for flood control and related purposes for protection of metropolitan area of Orange County, at an estimated construction cost not to exceed \$13 million.	1948 Flood Control Act, H.Doc.443, 80 <sup>th</sup> Cong., 1 <sup>st</sup> sess
37.	Oct 22, 1976	<b>SANTA PAULA CREEK, CA</b> Flood control improvements and prevention. Authorize for flood control.	S.Doc.91-106, 91st Cong., 2d sess
38.	Dec 17, 1970	<b>SAN LUIS REY RIVER, SAN LUIS REY RIVER BASIN, CA</b> Channel and levee, and beautification features.	FC Act 1936 (Amended 1937) 1941 1950 and Fed Water
39.	Oct 22, 1976	The project for flood control of the San Luis Rey river, CA, authorized pursuant to section 201 of Flood Control Act of 1965 (42 U.S.C. 1962d-5; 79 stat 1073-1074) is modified to authorize the secretary to construct the project substantially in accordance with the report of the corps of Engineers dated may 23, 1996 at a total cost of \$81,600,000 (Fed \$61,100,000, non-Fed \$20,500,000)	

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
38.	Jun 11, 1964	<b>SEPULVEDA DAM, CA RECREATION FACILITIES</b>	1941, 1950 and Fed Water Project Recreation Act of 1965.
39.	Oct 31, 1992	<b>SWEETWATER RIVER BASIN, CA</b> Channel improvement, as part of a combined flood control and highway project.	FC Act 1965, H.Doc. 240 and 309, 88 <sup>th</sup> Cong., 2d sess
	Sep 25, 1996	<b>TROPICANA AND FLAMINGO WASHES, NV</b> Flood reduction, erosion control, and wildlife enhancement.	WRDA 1992, Sec 101 (13) WRDA 1996, Sec 211 (f)(5), Public Law 104-303
	Aug 17, 1999	Authorizes project to demonstrate the potential advantages and effectiveness of non-Federal implementation of flood control projects, and provides that the Secretary shall enter into an agreement, pursuant to Section 211 of WRDA 96, with the non-Federal interests for development of that project. Proposed agreement would allow the non-Federal sponsor to construct any discrete segment of the authorized project as approved by the Army corps of Engineers.	WRDA 1999, Sec 370; Public Law 106-53
40.	Oct 22, 1976	An Federal costs associated with the project, incurred by the non-Federal interest to accelerate for modify construction of the project, in cooperation with the Corps of Engineers, shall be eligible to reimbursement by the Secretary.	
41.	Aug 17, 1999	<b>TUCSON DIVERSION CHANNEL (RECREATION DEVELOPMENT, AZ</b> This project for recreational development along the Tucson Diversion Channel.	FC Act 1936, (Amended 1937, 1941, 1950) and Fed Water Project Recreation Act of 1965
42.	Jul 24, 1946	<b>TUCSON DRAINAGE AREA, AZ</b> Report of the Chief of Engineers Report dated May 20, 1998, at a total cost of \$30,000,000, with an estimated Federal cost of \$19,400,000 and an estimated non-Federal cost of \$10,600,000.	WRDA 1999, PL106-53 Sec 101 (a) (5). H.Doc.220, 80 <sup>th</sup> Cong., 1 <sup>st</sup> sess.
47.	Aug 17, 1999	<b>WHITLOW RANCH DAM, QUEEN CREEK, GILA RIVER BASIN, AZ</b> Dam and flood control basins.	WRDA 1992, Sec219; WRDA 1999, Sec 502(b); Consolidated Approp Act, 2001, Sec 108(f)(48)
48.	Dec 21, 2000	<b>CAMBRIA SEAWATER DESALINATION, CA</b> This is an environmental infrastructure project and a desalination plant will be constructed to ensure adequate water supply	Consolidated Approp Act of 2001, HR 5666, Sec 110 & 111.
49.	Aug 17, 1999	<b>CITY OF SANTA CLARITA (PERCHLORATE), CA</b> This is an environmental infrastructure project and the study will evaluate the existing conditions of the Santa Clarita Valley Saugus area and develop alternatives for long-term solutions to restoring aquifer to drinking water quality.	WRDA 1999, Sec 502(b)(43) as amended by Con Appn Act of

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
50.	Jun 28, 1938	<b>HARBOR-SOUTH BAY WATER RECYCLING, CA</b> This is an environmental infrastructure project to design and construct over 30 miles of recycled water pipeline and distribution facilities.	2001 Sec 108(c)(6).
	Oct 31, 1992	<b>NORTH VALLEY REGIONAL WATER INFRASTRUCTURE (CITY OF LANCASTER), CA</b> The project will include design and construction of approximately 8.5 miles of 36-inch diameter water main and related facilities to serve the city of Lancaster, CA.	WRDA 1992 Sec 219(f), as amended by WRDA 1999, Sec 502(b) and amended by Consolidated Appropriations Act, 2001, Sec 108(d) (50)
51.	Aug 17, 1999		Flood Control Act of 1938, Sec 6 (Gila & Tribes, AZ & NM) , WRDA 1999, Sec 101 (a)(4).
52.	Aug 17, 1999	<b>RIO SALADO PHOENIX REACH, AZ</b> This is an ecosystem restoration project that consists of the establishment of riparian and Sonoran Dessert habitat restoration.	WRDA 1999, Section 595.
53.	Dec 21, 2000	<b>RURAL NEVADA, NV</b> This is focused on environmental restoration in Mesquite, NV, Boulder City, NV, and Moapa, NV.	Consolidated Appn Act of 2001, HR 5666, Sec 110 & 111.
54.	Oct 31, 1992	<b>SAN GABRIEL BASIN RESTORATION, CA</b> This an environmental infrastructure project and will establish restoration fund account and initiate construction of water quality treatment projects and facilities.	WRDA 1992, Sec 219 (f) as amended by WRDA 1999, and amended by the Consolidated Appropriations Act, 2001 Sec 108 (d) (52).
55.	Oct 31, 2000	<b>SOUTH PERRIS, CA</b> The project will design and construct a reverse osmosis desalination plan, wells, pipelines and brine management pipelines required for the phased implementation of the Perris Basins desalination Program.	WRDA 2000, Sec 101 (b) (4).
56.	Dec 11, 2000	<b>TRES RIOS, AZ</b> The project for ecosystem restoration, Tres Rios, AZ at a total cost of \$99,320,000, with an estimated Federal cost of \$62,755,000 and an estimated non-Federal cost of \$36,565,000.	PL 99-662 (WRDA 86, Sec 841). WRDA 2000, Sec 101 (b) (9).
59A.	Oct 31, 2000	<b>UPPER NEWPORT BAY HARBOR, CA</b> The authorized project includes dredging the access channels and two sediment basins to provide restoration measures to the degraded habitat areas and re-establishing wetland and wildlife habitat areas.	WRDA 2000, Sec 101 (b) (8).
		<b>SANTA BARBARA STREAMS, LOWER MISISON CREEK, CA</b> The project for flood damage reduction, Santa Barbara Streams, Lower Mission Creek, CA, at a total cost of \$18,300,000, with an estimated Federal cost of \$9,200,000 and an estimated non-Federal cost of \$9,100,000.	

LOS ANGELES, CA, DISTRICT

TABLE 33-B

AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
59B.	Oct 31, 2000	<b>WHITEWATER RIVER BASIN, CA</b> The project is for flood damage reduction, Whitewater River Basin, CA, at a total cost of \$28,900,000, with an estimated Federal cost of \$18,800,000 and an estimated non-Federal cost of \$10,100,000.	WRDA 2000 Sec101 (b) (10).

1. Contains latest published map.

2. Date approved by Chief of Engineers under provisions of section 205. Public Law 80-858, as amended.

3. Final date of approval by House of Senate Public Works Committees resolution under provisions of Section 201, Public Law 89-298.



**TABLE 33-C OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to 30 Sep 2002	
			Construction	Operation and Maintenance
Dana Point, Harbor, CA	Completed	1984	\$ 4,737,550 <sup>1</sup>	555,147 <sup>1</sup>
Harbor office at Morro Bay, CA <sup>3</sup>				
Los Angeles and Long Beach Harbors, San Pedro Bay, CA <sup>3</sup>	Active		53,627,729	13,147,957
Newport Bay Harbor, CA <sup>3</sup>	Inactive and Active (mod)	1982	796,897	2,696,245 <sup>5</sup>
Port San Luis, CA	Completed and Active (mod)	1984	1,426,050 <sup>6</sup>	1,042,352 <sup>7</sup>
Redondo Beach Harbor (King Harbor), CA <sup>8</sup> Active (mod)	Completed and	1984	4,766,898 <sup>9</sup>	5,237,313 <sup>10</sup>
Sunset Harbor (Bolsa Chica Bay), CA <sup>3</sup>				

1. Excludes \$4,777,000 required contributed funds and Coast Guard costs.
2. Includes \$45,147 for reconnaissance and condition surveys.
3. Authorized by Water Resources Development Act of 1986, Public Law 99-662, November 17, 1986, subject to favorable report.
4. Public Works Administration funds. Excludes \$796,897 required contributed funds and \$1,100 preauthorization costs.
5. Includes \$137,622 for reconnaissance and condition survey costs since Fiscal Year 1958. Excludes \$7,000 other contributed funds.
6. Includes \$568,417 for new work prior to modification by 1965 River and Harbor Act. Excludes Coast Guard costs. Includes \$104,031 expended in Fiscal Year 1987.
7. Includes \$54,715 for maintenance for project prior to modification by 1965, River and Harbor Act, and \$18,958 for reconnaissance and condition surveys. Includes \$90,130 expended in Fiscal Year 1987.
8. Authorized by Water Resources Development Act of 1986, Public Law 99-662, November 17, 1986.
9. Excludes Coast Guard costs.
10. Includes \$20,517 for reconnaissance and condition survey costs since Fiscal Year 1958. Includes \$293,167 expended in Fiscal Year 1987.

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2002**

**TABLE 33-D OTHER AUTHORIZED SHORE PROTECTION PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to 30 Sep 2002	
			Construction	Operation and Maintenance
Anaheim Bay Harbor Orange County, CA <sup>1</sup>	Completed	1967	\$ 89,119	
Bird Rock Area, La Jolla San Diego County, CA <sup>2</sup>	Completed	1967	25,881 <sup>3</sup>	
Coast of California, Point Mugu, to San Pedro Breakwater, CA	Completed	1972	1,253,594 <sup>4</sup>	
Doheny Beach State Park (Doheny State Beach), CA	Completed	1968	578,717 <sup>5</sup>	
Imperial Beach, CA	Active	1986	2,875,472 <sup>6</sup>	
Las Tunas Beach, San Diego County, CA	Active	1976	107,484	
Ocean Beach, San Diego County, CA <sup>7</sup>	Completed	1960	7,912	
Oceanside, San Diego County, CA	Completed	1982	4,367,442 <sup>8</sup>	
San Diego (Sunset Cliffs), CA	Active	1979	365,000 <sup>9</sup>	
San Gabriel River to Newport Bay (Surfside-Sunset and Newport Beach), Orange County, CA	Active	1985	9,722,100 <sup>10</sup>	
Surfside-Sunset-Newport, CA (Stage 11)	Active	1997	292,000	
Ventura-Pierpont area, CA	Completed (part) and Deferred (part)	1969	715,819 <sup>11</sup>	

1. The project authorized by the Act of Congress of October 23, 1962, H.Doc.602, 87th Cong., 2d sess., in lieu of part of the original Anaheim Bay Harbor project is covered under San Gabriel River to Newport Bay (Surfside-Sunset and Newport Beach), Orange County, CA

2. Authorized by Chief of Engineers under authority of Section 103, Public Law 87-874.

3. Excludes 475,614 required contributed funds.

4. Excludes \$1,238,418 required contributed funds.

5. Excludes \$431,260 required contributed funds.

6. Excludes \$919,437 required contributed funds; \$66,124 other contributed funds; and Coast Guard costs.

7. Plant in service.

8. Excludes \$604,817 other contributed funds.

9. Excludes \$180,438 required contributed funds.

10. Excludes \$4,626,638 for required contributed funds. Includes \$10,772 expended in Fiscal Year 1987.

11. Excludes \$1,117,406 other contributed funds for beach-nourishment betterments and \$618,949 required contributed funds.

**LOS ANGELES, CA, DISTRICT**

**TABLE 33-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to 30 Sep 2003	
			Construction	Operation and Maintenance
Allenville, AZ <sup>1</sup>	Completed	1984	\$ 3,000,000 <sup>2</sup>	
City Creek levee, San Bernardino County, CA <sup>1</sup>	Completed		400,000 <sup>2</sup>	
Clifton, San Francisco River, AZ	Active	1988	12,510,000	
Coyote and Berryessa Creeks CA	Active	1989	56,300,000	
Gila River Basin, AZ:	Deferred	1963		
Camelsback Dam (Gila River)				
Gila and Salt Rivers levee and channel improvements	Active (part) and Deferred (part)	1966	73,201 <sup>4</sup>	
Indian Bend Wash	Completed	1985	31,809,294 <sup>5</sup>	
Lower Gila River levee and channel improvements (Gila River and tributaries downstream from Painted Rock Dam)	Inactive	1975	2,413,051	
Middle Gila River channel improvements, upper end of Safford Valley to Buttes dam site (Camelsback dams site to Salt River)	Active	1970	402,867	
Pinal Creek channel improvements (Globe)	Deferred	1968	121,509 <sup>4</sup>	
Santa Rosa Wash (Tat Momolikit Dam and Lake St. Clair)	Completed	1982	10,218,900	
Tucson Diversion Channel	Completed	1986	6,922,633 <sup>6</sup>	
Goleta, CA, and Vicinity	Active	1982	500,000	
Hansen Dam, Los Angeles County <sup>7</sup>				
Drainage Area, CA (mod)				
Holbrook levee Little Colorado River, Colorado River Basin, AZ	Completed	1950	335,000	
Little Colorado River at Holbrook <sup>7</sup>	Completed	1996		
Needles, San Bernardino Co.	Completed	1973	1,000,000 <sup>8</sup>	
Nogales Wash and Tributaries, AZ	Active	1989	11,100,000	
Oceanside Harbor, CA	Completed	1989	5,100,000	
Oro Grande Wash channel improvements, Mojave River Basin, CA <sup>1</sup>	Completed	1970	1,000,000 <sup>9</sup>	
Phoenix, AZ and Vicinity (Gila River)	Completed			
Quail Wash levee, Joshua Tree, San Bernardino Co. CA	Completed		212,745	
Ridgecrest, Kern County, CA <sup>1</sup>	Terminated	1973	195,194	
Rose Creek channel improvements, San Diego, CA <sup>1</sup>	Completed	1972	982,432 <sup>10</sup>	
San Diego River Basin, CA				
Santa Ana River Basin, CA:				
Devil, East Twin, and Warm Creeks channel improvements and Lytle Creek levee	Completed	1962	7,753,937 <sup>11</sup>	
Mill Creek levees	Completed	1961	617,890 <sup>12</sup>	
Riverside levees	Completed	1959	2,104,478	
San Jacinto River levee and Bautista Creek channel	Completed	1985	9,258,207 <sup>13</sup>	
Santa Clara River levee improvement, Santa Clara River Basin, CA	Completed	1961	2,126,672	
Santa Maria Valley levees, Santa Maria River Basin, CA	Completed	1984	10,079,927 <sup>14</sup>	
Santa Paula Creek channel and debris basins (including Mud	Active	1983	4,790,173 <sup>15</sup>	

**TABLE 33-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Creek), Santa Clara River Basin, CA			
Sespe Creek at Fillmore, Ventura County, CA <sup>1</sup>	Completed	1984	4,000,000 <sup>16</sup>
South Fork of the Santa Clara River, Santa Clarita Valley, CA <sup>1</sup>	Active	1985	632,158
Telegraph Canyon Creek, Chula Vista, CA <sup>1</sup>	Completed	1985	844,732 <sup>17</sup>
Tijuana River Basin, CA	Completed	1979	1,703,031 <sup>18</sup>
Ventura Harbor, CA	Active	1990	6,455,000
Ventura River Basin, CA:			
Stewart Canyon debris basin and channel	Completed	1964	939,908 <sup>19</sup>
Ventura River levee	Completed	1950	1,349,638 <sup>20</sup>
Whitewater River, CA:			
Banning Levee-San Geronio River, Riverside County <sup>1</sup>	Completed	1966	97,868
Chino Canyon improvements, Palm Springs <sup>1</sup>	Completed	1973	819,878 <sup>21</sup>
Tahchevah Creek detention basin and channel improvements	Completed	1967	1,420,552 <sup>22</sup>
Tahquitz Creek	Inactive	1974	1,063,600
Winslow (tributaries of Little Colorado River), Little Colorado River Basin, AZ	Completed (part) and Deferred (part)	1973	1,831,300

1. Authorized by Chief of Engineers under authority of Section 205, Public Law 80-858, as amended.

2. Excludes \$187,965 required contributed funds.

3. Excludes \$371,058 other contributed funds.

4. Advance planning only.

5. Excludes \$304,720 required contributed funds and \$3,130,762 other contributed funds. Includes \$31,071 expanded

6. Includes \$1,158,006 Code 710 funds since Fiscal Year 1977.

Excludes \$749,058 required contributed funds and \$394,364 funds.

7. Authorized by Water Resources Development Act of 1986, Public Law 99-662, November 17, 1986.

8. Excludes \$619,912 required contributed funds and \$91,160 other contributed funds.

9. Excludes \$514,806 required contributed funds and \$176,295 other contributed funds.

10. Excludes \$251,000 required contributed funds and \$154,733 other contributed funds.

22. Excludes \$74,718 required contributed funds.

11. Excludes \$200,000 required contributed funds and \$1,641,668 other contributed funds.

12. Excludes \$35,830 other contributed funds.

13. Excludes \$712,000 other contributed funds.

14. Excludes \$106,364 other contributed funds.

Includes \$74 expended in Fiscal Year 1987.

15. Excludes non-Federal costs of \$295,000 for local cooperation items for required and \$49,458

16. Excludes \$559,525 required contributed other funds.

17. Includes \$3,846 expended in Fiscal Year 1987. Excludes \$104,941 other contributed funds.

18. International Boundary & Water Commission funds

19. Excludes \$179,148 other contributed funds.

20. Includes \$6,000 Code 710 funds since Fiscal Year 1977.

Excludes \$17,006 other contributed funds.

21. Excludes \$8,718 required contributed funds; \$53,470 other contributed funds.

**LOS ANGELES, CA, DISTRICT**

**TABLE 33-G**

**DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date and Authority	Federal Funds Expended	Contributed Funds Expended
Hodges Dam, San Dieguito River Basin, CA	1958	1978 Sec. 12, Public Law 93-251		
Las Vegas Wash Tributaries, Colorado River Basin, NV	1964	1977 Sec. 12, Public Law 93,251	295,191	
Santa Ana River Basin (and Orange County), CA:				
Aliso Creek Dam, CA		1986 Sec. 1002 Public Law 99-662		
San Juan Dam, CA	1950	1986 Sec. 1002, Public Law 99-662	67,361	
Trabuco Dam, CA		1986 Sec. 1002, Public Law 99-662		
Villa Park Dam, CA		1978 Sec. 12, Public Law 93-251		
Sierra Madre Wash Channel Los Angeles County Drainage Area, CA	1986	1986 Sec. 1002, Public Law 99-662		
Lower Mission Creek Santa Barbara, CA	1988	1988 Sec. 1001(A), Public Law 99-662	1,641,144	
San Diego River Mission Valley, CA	1978	1978 Sec 1001 (B) (2), Public Law 99-662	1,708,437	
University Wash and Spring Brook, Riverside, CA	1975	1986 Sec. 1002, Public Law 99-662	213,313	

**TABLE 33-H RECONNAISSANCE AND CONDITION SURVEYS**

Project	Date
Channel Islands Harbor	Dec 2002
Dana Point Harbor	Aug 2003
Los Angeles Long Beach Harbors, CA	
Reach 1) LA River Estuary (Queens Way Bay)	Sep 2001
Reach 2) Port of Los Angeles	Mar 2001
Reach 3) Port of Long Beach	Apr 2000
Marina Del Rey, CA	Jun 2003
Morro Bay Harbor, CA	Sep 2003
Newport Bay Harbor, CA	Oct 2003
Oceanside Harbor, CA	Apr 2003
Port Hueneme, CA	Jun 2003
San Diego Harbor, CA	Aug 2003
San Diego River-Mission Bay, CA	Jul 2003
Santa Barbara Harbor, CA	Mar 2003
Ventura Harbor, CA	Feb 2003

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LOS ANGELES, CA, DISTRICT

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**TABLE 33-I**

**INSPECTION OF COMPLETED  
FLOOD CONTROL PROJECTS**

(See Section 43 of Text)

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Project	Date
Los Angeles County Drainage Area, CA (250 miles of channels and 21 Debris Basins)	Oct 2002 – Sep 2003
Santa Ana River Basin and Orange County, CA (48 miles of channels)	Oct 2002 – Sep 2003
Lytle and Cajon Creeks, CA	Jul 2003
Banning Levee, CA	Dec 2002
Oro Grande Wash, CA	Apr 2003
Santa Rosa Wash, AZ	Mar 2003
Indian Bend Wash, AZ	Mar 2003
Cave Buttes Dam, AZ	May 2003
Ventura River Levee, CA	Jun 2003
Cucamonga Creek, CA	Aug 2003

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 33-J                      FLOOD CONTROL WORK UNDER SPECIAL  
AUTHORIZATION FLOOD CONTROL ACTIVITIES  
PURSUANT TO SECTION 205, PUBLIC LAW 80-858,  
AS AMENDED (PREAUTHORIZATION)  
(See Section 45 of Text)**

Study	Stage	Fiscal Year Cost (Federal)
Anaverde Creek, Palmdale, CA	Feasibility	\$ 15,090
Arizona State Flood Warning, AZ	Construction	5,062
Arroyo Simi Study Moorepark, CA	Feasibility	9,904
City of Laguna Beach, CA	Plans & Specs	19,554
City of Norwalk	Feasibility	19,344
City of Twentynine Palms, CA	Feasibility	86,645
City of Whittier	Feasibility	57,271
Desert Hot Springs, CA	Feasibility	58,499
Ephriam Canyon Wash, Nogales	Feasibility	697
Fillmore Wastewater Treatment Plant, CA	Plans & specs	58,417
Forest Falls San Bernardino County, CA	Feasibility	125
Fox Field Corridor, Lancaster, CA	Feasibility	783
Huntington Beach, CA	Feasibility	80,637
Hunts Canyon, City of Palmdale, CA	Feasibility	62,644
Little Tijuana River, San Diego County, CA	Plans & Specs	141,608
Nye County, Pahrump, NV	Feasibility	86,033
Thacher Creek, Ventura, CA	Feasibility	17,346
Section 205 Coordination Account		9,816
		\$729,475



# SAN FRANCISCO, CA, DISTRICT

This district comprises the Klamath River Basin in southern Oregon and portions of northern and western California consisting of drainage basins tributary to the Pacific Ocean from the Oregon-California State line on

the north to Cape San Martin, CA, on the south except for basins tributary to the San Francisco Bay system which lie east of the Benecia-Martinez Bridge.

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### Navigation

#### 1. CRESCENT CITY HARBOR, CA

**Location.** The project is located in Crescent City, Del Norte County approximately 350 miles north of San Francisco and 17 miles south of the Oregon border.

**Existing project.** There are three existing Federally maintained navigation channels at Crescent City Harbor.

The Entrance Channel begins at the outer breakwater and is -20 feet MLLW (Mean Lower Low Water), 2,600 feet long, and 320 to 200 feet wide. The Entrance Channel connects to the Inner Harbor Basin, which is 1,500 feet long and extends from the Entrance Channel along the lee side of the inner breakwater. The Inner Harbor Basin is authorized to -20 feet MLLW, but since 1993 has been maintained at -15 feet MLLW due to economic justification.

The new access channel extends 1,200 feet from the Inner Harbor Basin to the entrance of the Small Boat Basin,

and varies in width from 140 feet to 210 feet with a channel depth of -14 feet MLLW.

**Local cooperation.** The local sponsor is the Crescent City Harbor District. The Project Cooperation Agreement was signed in June 2000 and satisfied the requirements of the Water Resources Development Act of 1986, as amended, PL 99-662. The agreement includes the following requirements: 1) provide lands, easements, rights-of-way, and dredged material disposal areas; 2) pay 10 percent of the costs of new construction; and 3) pay an additional 10 percent plus interest of the project costs allocated to general navigation features within a period of 30 years following completion of construction.

**Terminal facilities.** The Harbor contains a commercial small boat basin with 240 permanent berths and temporary moorings for approximately 20 vessels, a 250 slip recreational mooring facility, two fish processing plants with docks, a main dock, a marine repair facility, a U.S. Coast Guard dock, and other auxiliary commercial and recreational facilities.

**Operations during fiscal year.** New Work: Construction completed in November 2000. Maintenance: Operations and maintenance includes engineering and design for fall dredging on a 5 year dredging cycle.

## **2. HUMBOLDT HARBOR, CA**

**Location.** The project is located in Humboldt Bay, about 280 miles north of San Francisco.

**Existing project.** Adopted by Acts of March 3, 1881, July 5, 1884, August 5, 1886, July 3, 1892, March 3, 1889, June 25, 1910, July 3, 1930, August 30, 1935, August 26, 1937, July 16, 1952, and August 1968. The project consists of: 1) a Bar and Entrance Channel -48 feet deep, tapering from a width of 1,600 feet at seaward mile 0.9 to 500 feet at seaward mile 0.2 and then 500 feet wide to mile 0.8; 2) a North Bay Channel -38 feet deep and 400 feet wide between mile 0.75 and mile 4.29; 3) an Outer Eureka Channel 35 feet deep and 400 feet wide between mile 4.29 and mile 5.0; 4) an Inner Eureka Channel between mile 5.0 and mile 6.30 which is 26 feet deep and 400 feet wide; 5) a Samoa Channel -38 feet deep and 400 feet wide between mile 4.29 and mile 5.84; 6) a Turning Basin beyond mile 5.84 at the upper end of the Samoa Channel which is -38 feet deep and 1,000 feet wide by 1,000 feet long; 7) an Anchorage Area 35 feet and 1,200 feet wide by 1,200 feet long in the North Bay between the Entrance Channel and Gunther Island (the anchorage area is not maintained); 8) a Fields Landing Channel 26 feet deep and 300 feet wide and a turning basin

at mile 3.16 which is 600 feet wide and 800 feet long; and 9) Arcata Channel located in the extreme North Bay (18 feet deep and 150 feet wide) is no longer used for commercial navigation and has not been maintained since 1931.

The Water Resources Development Act of 1996 authorized deepening the Bar and Entrance Channel to a depth of -48 MLLW; deepening the North Bay Channel, Samoa Channel, and Samoa Turning Basin to a depth of -38 feet MLLW; widening the north side of the Entrance Channel an additional 200 to 275 feet; moving the southern edge of the Entrance Channel away from the South Jetty and to the north by 100 feet; and widening and realigning the entrance to the Samoa Turning Basin. Project cost is \$16,689,000 of which \$12,099,000 is Federal cost (includes \$200,000 Coast Guard cost) and \$4,590,000 is non-Federal cost (includes \$1,680,000 non-Federal reimbursements).

**Local cooperation.** The local sponsor is the Humboldt Bay Harbor, Recreation and Conservation District. The Project Cooperation Agreement was signed in March 1999 and satisfied the requirements of the Water Resources Development Act of 1986, as amended, PL 99-662. The agreement includes the following requirements: 1) provide lands, easements, rights-of-way, and dredged material disposal areas; 2) pay 25 percent of the costs of construction; and 3) pay an additional 10 percent plus interest of the project costs allocated to deep draft navigation within a period of 30 years following completion of construction.

**Terminal facilities.** The harbor serves six deep water breakbulk terminals with storage space for 120,000,000 FBM of logs/lumber and 100,000 MT of woodchips and warehouse space for 1,000,000 FBM of lumber and 51,000 MT of woodpulp and particle board.

**Operations during fiscal year.** New Work: Construction completed in April 2000. Maintenance: Normal O&M dredging was performed with the Essayons and Yaquina. A combined total of 1,794,555 cubic yards were removed at a cost of \$5,073,920. All dredged material was deposited in the permanently designated, Government-furnished, Humboldt Open Ocean Disposal Site (HOODS).

## **3. OAKLAND HARBOR, CA**

**Location.** Oakland Harbor is located in the City of Oakland, California, on the eastern shore of central San Francisco Bay immediately south of San Francisco-Oakland Bay Bridge.

**Existing project.** Adopted by Acts of June 23, 1874, June 25, 1910, September 22, 1922, January 21, 1927, April 28, 1928, July 3, 1930, March 2, 1945 and October 23, 1962. The project was completed February 1975, except for deepening the tidal canal to -35 feet from Fortman Basin to Park Street, and to -25 feet above Park Street which was deauthorized November 1977. Reconstruction of the Fruitvale Avenue Highway Bridge was completed in December 1973 and turned over to local interests for operation and maintenance. Project consists of entrance channel to Oakland Outer Harbor, -42 feet deep, accessed from San Francisco Bay and 800 feet wide across the shoal southeast of Yerba Buena Island, narrowing to 600 feet at Oakland Mole; thence, a channel and turning basin -42 feet deep and from 600 to 950 feet wide in outer harbor to the Army Base. Project also provides entrance channel to Oakland Inner Harbor, -42 feet deep and 600 feet wide to Howard Terminal and 35 feet deep to west end of Government Island, with additional widening to within 75 feet of the pierhead line in front of Grove and Market Street (formerly municipal) piers and along the south side of the channel from Harrison Street eastward to harbor line point 119 in Brooklyn Basin; a channel 35 feet deep and 500 feet wide through Brooklyn Basin; for a triangular area 35 feet deep about 2,700 feet long and maximum width of 300 feet at western end of Brooklyn Basin; a channel along north side of Brooklyn Basin which is 35 feet deep and 300 feet wide for 1,300 feet, thence 25 feet deep and 300 feet wide for 3,700 feet to a turning basin at east end of Brooklyn Basin which is 35 feet deep, 500 feet wide, and 1,200 feet long; a channel in the tidal canal 35 feet deep and 275 feet wide from Brooklyn Basin to Park Street, thence 18 feet deep to San Leandro Bay; a total channel length of 8-1/2 miles from San Francisco Bay to San Leandro Bay. Project also includes parallel rubblemound jetties at entrance to inner harbor, north jetty 9,500 feet long and south jetty 12,000 feet long; three highway bridges across the tidal canal, two of which (at Park Street and High Street) have been replaced by local interests and the Fruitvale Avenue Bridge constructed by Federal Government has been transferred to Alameda County. The railroad bridge has been transferred to the County for operation and maintenance. The Federal Government will reimburse the County for the cost of operating and maintaining the railroad bridge.

Oakland Harbor is the 2<sup>nd</sup> largest port on the West Coast and the fifth largest container port in the nation. Traffic is primarily containers ships. Ports around the world are increasing channel depths and expanding throughput capacity to compete for the next generation of deep-draft container ships. The Port is proposing to deepen the federal channels of the Oakland Harbor and Port-maintained berths to depths of 50' below MLLW. In constructing this project,

the Port expects to dredge up to 12.9 million cubic yards of sediment, which will require reuse and disposal. If the Port does not get down to -50', shipping companies will bypass the Port of Oakland. This will hurt not just the Port of Oakland, but the overall Bay Area economy as well. The recommended/ Locally Preferred Plan has a benefit-cost-ratio greater than 6.4 to 1. The estimated construction cost is \$252.3 million, including \$38 million of local service facilities (LSF) (berth rehabilitation & deepening). Disposal options for dredged material include the San Francisco Deep Ocean Disposal Site (SF-DODS), Middle Harbor or the Fleet and Industrial Supply, Oakland (FISCO), Hamilton Airfield, Montezuma wetland restoration project, together with upland disposal/reuse at Mare Island and Alameda Point. Water Resources Development Act (WRDA) of 1999 authorized this project for \$252.3 million.

**Local cooperation.** A draft Project Cooperation Agreement satisfying the requirements of the Water Resources Development Act of 1986, PL 99-662 was sent to Corps Headquarters for review and approval in early Feb 2001. Final PCA was executed on the 24 May 2001. The agreement includes the following requirements: (1) provide lands, easements, rights-of-way, and dredged material disposal areas; (2) pay 25 percent of the costs allocated to deep draft navigation during construction to a depth in excess of 20 feet but not in excess of 45'; (3) pay 50% of the costs allocated to deep draft navigation during construction in excess of 45'; and (4) pay additional 10 percent plus interests of the costs allocated to deep draft navigation within a period of 30 years following completion of construction. Deepening to 42' MLLW was completed in July 1998. The Port of Oakland completed a feasibility study to deepen Oakland Harbor to -50' MLLW at 100% Port cost under the authority of Section 203 of WRDA 86. The estimated project cost is \$284 million with an average annual navigation benefit of \$178 million. Project was authorized in WRDA 99. Construction began in October 2001 with a demolition contract for the Inner Harbor Turning Basin.

**Terminal facilities.** The port occupies 19 miles on the mainland shore of San Francisco Bay. There are 550 acres of marine terminal facilities, 28 deepwater berths and 25 container cranes, including 5 of the post Panamax type. On-dock covered storage space exceeds 600,000 square feet. Three major railroads, Santa Fe, Southern Pacific and Union Pacific serve the port.

**Operations during fiscal year.** New Work: Construction to a depth in excess of 20 feet but not in excess of 45'. The first phase of the Inner Harbor Turning Basin was completed in September 2003. Maintenance: Operations and maintenance of Fruitvale Avenue R.R.

Bridge including engineering and design by hired labor, cost \$185,253; operations and maintenance of Miller-Sweeney Highway Bridge, cost \$73,805; and Operations and Maintenance of Oakland Harbor 286,978 cubic yards removed at a cost of \$3,983,996. San Francisco Deep Ocean Disposal Site (SF-DODS) was utilized for material disposal. The FY 04 Operation and Maintenance work is scheduled in August 2004.

#### **4. RICHMOND HARBOR, CA**

**Location.** Richmond Harbor is located in central San Francisco Bay, in Contra Costa County in the City of Richmond.

**Existing project.** The existing navigation channel extends from deep water in San Francisco Bay into the Port of Richmond. The Southampton Shoal Channel and Long Wharf Maneuvering Area, at the entrance to the harbor channels are maintained to -45 feet MLLW. The Entrance Channel, Potrero Reach Channel, Potrero Sharp Turn, Inner Harbor and about half of the Santa Fe Channel, to -38 feet and the remainder of the Santa Fe Channel from the Lauritzen Channel confluence to -30 feet. The width of the navigation channel is 600 feet for most of its length to Point Richmond with one maneuvering area: in front of the Long Wharf. At Potrero Reach, the 500 foot width flares to about 600 feet at Point Potrero with a turn at the point, 1,200 feet wide and 38 feet deep. Thence, the channel continues into the Inner Harbor at a width of 850 feet in a northerly direction to the entrance of the Santa Fe Channel. The Santa Fe Channel extends northwesterly at a width of 200 feet into the upper basin terminus. A turning basin is provided at Point Richmond, and a rubble-mound training wall extending 10,000 feet westerly from Brooks Island is also provided in the Potrero Reach. For details, see page 1977 of Annual Report for 1915 and page 1646 of Annual Report for 1938.

Improvements consisted of a construction plan involving four and one-half miles of channel between Richmond Long Wharf and the Santa Fe Channel. The project deepened the existing -35-foot channels to -38 feet, and provided a turning basin of 1,200 feet near Point Potrero. Approximately 2,200,000 cubic yards of sediment were dredged and transported to aquatic and upland disposal sites. Construction was completed in August 1998.

The project cost was \$40,000,000 of which \$28,300,000 was Federal cost (includes \$130,000 Coast Guard costs) and \$11,700,000 is non-Federal cost (includes \$1,310,000 non-Federal reimbursements).

The existing project was authorized on October 27, 1965. Previous projects were authorized by Acts adopted in 1917, 1930, 1935, 1938, 1945 and 1954. The proposed improvements are authorized by the Water Resources Development Act of 1986, PL 99-662.

**Local cooperation.** In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the local sponsor complied with the following requirements: (1) pay 10 percent of the costs to 20 feet below mean lower low water and 25 percent of costs between 20 and 45 feet below mean lower low water and (2) reimburse an additional 10 percent with interest of the costs allocated to general navigation facility of the project within a period of 30 years following completion of construction; and (3) provide all lands, easements, rights-of-way, relocation and dredged material disposal areas necessary for the projects. The value of lands, easements, rights-of-way and dredge disposal areas can be credited toward the payment required under item (2) above.

**Terminal activities.** The Port of Richmond encompasses nine privately-owned terminals and seven terminals owned by the Port.

**Operations during fiscal year.** New Work: Construction project completed in May 1998. Maintenance: Operations and Maintenance dredging of Richmond Outer Harbor was performed by the U.S. Hopper dredge "Essayons." The Essayons removed 155,740 cubic yards of shoal material from the Outer Harbor, cost \$783,000. The Inner Harbor portion, 470,659 cubic yards were removed at a cost of \$8,323,177. The FY 03 Operations and Maintenance dredging completed in August 2003. The FY 04 Operations and Maintenance dredging is scheduled in early July 2004.

#### **5. SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, CA**

**Location.** The project is located on the Sacramento River, between Collinsville and the Port of Sacramento, a distance of approximately 43 miles, in the counties of Sacramento, Contract Costa, Solano and Yolo, CA.

**Existing project.** Existing waterways are inadequate to efficiently accommodate vessels currently using the channel. Because of the depth restriction, only 20% of the world's fleet can currently load to full design depth. Once deepened, the Port of Sacramento will be able to accommodate 70% of the world's fleet at full design draft. The project plan is to deepen the existing 30 feet

Sacramento River Deep Water Ship Channel from N.Y. Slough to the Port of Sacramento, a distance of about 43 miles, to 35 feet, and widen the channel as necessary. The project provides for establishment of wetland habitat and upland habitat to mitigate for such losses. Current project estimate is \$56,480,000 and is comprised of Federal cost (Corps) of \$27,980,000; Federal cost (Coast Guard-for navigation aids) of \$300,000 and non-Federal cost of \$28,200,000.

**Local cooperation.** A Local Cooperation Agreement (LCA) was signed with the local sponsor, the Port of Sacramento, in June 1986. A modification to the LCA, necessitated by the Water Resources Development Act of 1986, was executed in December 1988. The local sponsor will provide lands, easements, rights of way and dredged material disposal areas; modify or relocate buildings, utilities, roads, bridges (except railroad bridges) and other facilities, where necessary in the construction of the project; and pay 25 percent of the costs allocated to deep draft navigation during construction.

**Terminal facilities.** All main wharves at Sacramento have rail connections. Three facilities are owned by the City of Sacramento and the rest are privately owned; all are privately operated. For full description, see "Port and Terminal Facilities at the Ports of Sacramento, Stockton, Pittsburg and Antioch, Calif., 1986". Deepwater terminal facilities are comprised of wharves, piers, administration and storage buildings and belt railroad facilities. The majority of these facilities are owned and operated by the Sacramento-Yolo Port District and the rest are privately owned and operated. The facilities are considered adequate for existing commerce.

**Historical summary.** Funds to initiate pre-construction planning were appropriated in fiscal year 1982. Project construction was authorized by the Supplemental Appropriations Act of 1985 and modified by the WRDA 1986. The General Design Memorandum was approved and the Record of Decision was signed in May 1987. The modified LCA was executed in December 1988. The first construction contract for deepening was awarded in February 1989 and completed in July 1990. A second construction contract was awarded in September 1990 and completed in August 1991. Construction from River Mile 43 to River Mile 35 has been completed. In fiscal year 1992, the sponsor requested indefinite suspension of the project due to their inability to meet their cost share requirements. Based on Congressional direction in Conference Report 105-749, dated September 25, 1998, the Corps developed a study plan outlining the scope, schedule and costs to prepare a Limited Reevaluation Report (LRR).

This reevaluation will serve as the basis for requesting construction Federal funding. Section 305 of WRDA 2000 "authorized credit toward the non-Federal share of the cost of the project the dredged material from the project that is purchased by public agencies or nonprofit entities..." In June 2002, the project was transferred from Sacramento District to San Francisco District.

**Operations during fiscal year.** Continue Re-evaluation report. Final Limited Re-evaluation Report/Supplemental Environmental Impact Report/Statement is scheduled for September 2005.

## **6. SAN FRANCISCO BAY TO STOCKTON, CA (JOHN F. BALDWIN AND STOCKTON SHIP CHANNELS)**

**Location.** The project consists of the navigational channel system, initiating at the San Francisco Bay, and extending over 50 miles to the Port of Stockton.

**Existing project.** The existing project was adopted by 1965 River and Harbor Act (H. Doc. 208, 89th Cong., 1st sess., contains latest published map). The project consists of deepening the San Francisco Bar to 55 feet; constructing a new channel in upper San Francisco Bay through Richmond to 45 feet; deepening the Pinole Shoal Channel in San Pablo Bay to 45 feet (currently 35 feet); deepen the Suisun Bay Channel to 45 feet to Chipps Island (currently 35 feet); and deepen the Stockton Deep Water Ship Channel to 35 feet to the Port of Stockton. Several attempts have been made since the initial construction to deepen portions of the channel system, however, environmental opposition to potential impact to water quality as a result of the deeper channel has halted any attempt to construct the authorized project.

**Local cooperation.** The Port of Stockton and Contra Costa County Water Agency are the non-Federal sponsors in support of deepening the entire project. A resolution by the Committee on Public Works and Transportation of the United States House of Representatives, September 24, 1992, requested a review of the report of the Chief of Engineers to determine whether modifications of the recommendations are advisable at the present time for navigation and other purposes from Carquinez Strait to Stockton. The Energy and Water Development Appropriation Act of 1998 included an appropriation of \$100,000 for the Corps of Engineers to initiate a reconnaissance study of deepening the Port of Stockton's main ship channel to 40'. The Sacramento District (SPK)

prepared the reconnaissance report in September 1998, which indicated a Federal interest in deepening the project. In June 2002, the project was transferred from Sacramento District to San Francisco District, and a General Reevaluation Report (GRR) was initiated in July 2002, under the existing 1965 construction authority.

Based on request to improve the navigational safety at the oil terminals at Avon by the San Francisco Bar Pilots and the shipping industries, the Contra Costa County Water Agency requested funding to allow for the Corps of Engineers reevaluation of the turning basin at Avon, as a congressional add in the Federal FY 01 budget. As part of the 2001 Energy and Water Development Appropriation Bill, the House Committee on Appropriation directed the Corps to complete the General Reevaluation Report. The local sponsor, Contra Costa County, supports the project, however, must obtain the non-federal cost share for the study from the primary beneficiaries of the project – specifically the oil companies operating at Avon Terminal. The County has been in lengthy negotiations with the oil companies to obtain the funding and to initiate the study.

**Terminal facilities.** See Port Series No. 30, revised 1991, No. 31, revised 1991, and No. 32, revised 1986, titled respectively: "The Ports of San Francisco, Redwood City, and Humboldt Bay, Calif."; "The Ports of Oakland, Alameda, Richmond, and the Ports on Carquinez Strait, Calif."; and "The Ports of Sacramento, Stockton, Pittsburg, and Antioch, Calif." Facilities are considered adequate for existing commerce and will be adequate for future commerce upon completion of new terminal facilities.

**Operations during fiscal year.** A General Reevaluation Study was initiated in July 2002 to investigate the deepening of the entire navigational channel system from the San Francisco Bay to the Port of Stockton. Because the channel system has already been constructed to the authorized channel depth of 35 feet, the existing Federal project is being reevaluated to determine to what extent changes in the channel depth are justified. The 1st phase of the GRR focused on evaluating the project economics and the potential salinity intrusion, issues that prevented the deepening of the channel in the past. The results of this initial effort supported Federal involvement toward deepening the channel, as well as found only negligible impact to water quality as a result of the deeper channel. The balance of the GRR is currently being prepared.

**Location.** The Sonoma Baylands site is located in Sonoma County, CA, approximately 25 miles north of San Francisco near the mouth of the Petaluma River, on the northern shoreline of San Pablo Bay.

**Existing project.** Authorized by Water Resources Development Act of 1992. The project includes restoration of tidal wetlands on 348 acres of diked lands, including construction of 11,645 feet of replacement levee around the landward periphery of the site, fifteen internal peninsulas for wave protection, three weirs for the discharge of dredged material supernatant, and modification of three existing high voltage electrical towers. Project included placement of 207,000 cubic yards of maintenance-dredged material from the Petaluma River navigation channel in a pilot project area and placement of 1.7 million cubic yards of suitable dredged material from the Oakland Harbor deepening projects on the remainder of the site. Placement of material was completed on November 6, 1995.

The project cost is \$8,900,000, of which \$6,675,000 is Federal cost and \$2,225,000 is non-Federal cost. Oakland deepening to -42' MLLW was completed in July 1998.

**Local cooperation.** The California State Coastal Conservancy signed a Project Cooperation Agreement on May 6, 1994 satisfying the requirements of the Water Resources Development Act of 1992, PL 102-580 and signed an amendment on December 9, 1994 to include the placement of Oakland Harbor dredged material. The local sponsor must comply with the following requirements: (1) provide lands, easement, and right of ways; (2) modify or relocate utilities, roads, bridges (except railroad bridges) and other facilities, where necessary in the construction of the project; (pay 25 percent of the total project cost in accordance with Section 106 of the Water Resources Development Act of 1992. The local sponsor has also agreed to make all required payments concurrently with project construction.

**Terminal facilities.** N/A

**Operations during fiscal year.** The project was restored to tidal action on October 25, 1996. Monitoring of the project is continuing. Project was turned over to California Coastal Conservancy in August 1998 for operation, maintenance, repair, replacement, and rehabilitation of the functional portion of the project.

## **7. SONOMA BAYLANDS WETLANDS DEMONSTRATION PROJECT, CA**

## **8. SAN FRANCISCO BAY-DELTA MODEL STRUCTURE, CA**

**Location.** The model, including a Class A regional visitor center, is located in Sausalito, CA, adjacent to San Francisco Bay about two miles north of the Golden Gate Bridge.

**Existing project.** The San Francisco Bay/Delta Model, which covers 17 miles of the Pacific Ocean beyond the Golden Gate, all of San Francisco Bay proper, San Pablo Bay, Suisun Bay, and all of the Sacramento-San Joaquin Delta east of Suisun Bay to the cities of Sacramento on the northeast and Stockton and Tracy on the south, was constructed in a rehabilitated warehouse at Sausalito, CA, as a part of the San Francisco Bay and Tributaries, CA, Study authorized by the River and Harbor Act of May 17, 1950 (PL 81- 516, Section 110). The model was authorized as an operation and maintenance project in the Water Resources Development Act of 1974 (PL 93-251, Section 8). The model successfully reproduces to the proper scale the rise and fall of the tide, flow and currents of water, salinity intrusion, and trends in disposition of sediments. It is a useful tool to examine forces existing in the bay and estuarine system and to predict results of proposed changes.

**Local cooperation.** None required.

**Operations during fiscal year.** Maintenance: Operations and maintenance of the model continues.

**Historical summary.** Original model construction was initiated 1956 and completed 1957. The addition of the Sacramento-San Joaquin Delta to the original model was initiated 1966 and completed 1969. Annual visitation to the model averages between 140,000 to 150,000 people. The central exhibits were completed in December 1981. Extensive exhibit upgrade for the Visitor Center and development of Cooperative Association completed September 30, 1989. The Cooperative Association provides support to the visitor center and their programs. An active volunteer program exists at the Visitor Center providing approximately 300 hours of effort monthly. The hydraulic engineering department closed 4 January 2000. The Visitor Center operations continues to offer public information-educational services via programs, exhibits, and special events. The Visitor Center is currently developing new interpretive and exhibit plans.

Total cost of regional visitor exhibits and model as of September 30, 2003, was \$41,824,405 of which \$18,917,878 was for the regional visitor center, \$1,383,324 for exhibits, and \$21,523,203 for maintenance.

## 9. SAN FRANCISCO BAY LONG TERM MANAGEMENT STRATEGY (LTMS), CA

**Location.** The San Francisco Bay Long-Term Management Strategy (LTMS) for dredged material disposal covers deep and shallow draft navigation channels of the San Francisco Bay region including Central San Francisco Bay, South Bay, San Pablo Bay and Suisun Bay environs.

**Existing project.** The San Francisco Bay region has an annual disposal requirement of approximately 2.4 million cubic yards (mcy) to maintain navigation channels. The Bay also has a new civil works requirement of approximately 19 mcy. In January 1990, the Army Corps of Engineers, the Environmental Protection Agency, Region IX, the San Francisco Bay Water Quality Control Board and the San Francisco Bay Conservation and Development Commission convened with approximately thirty interested agencies and organizations with concerns regarding dredged material disposal in San Francisco Bay. These four agencies have the responsibility for regulation of the waters of the US and California for disposal of dredged material.

The four agencies and the concerned navigation interests formed the LTMS to develop technically feasible, economically prudent, and environmentally acceptable long range solutions to the dredging and disposal needs for the San Francisco Bay region over the next fifty years. In determining acceptable dredged material disposal locations, the LTMS is evaluating a broad array of potential ocean, in-Bay and non-aquatic beneficial uses disposal alternatives.

**Local cooperation.** Pursuant to their regulatory responsibilities, the Division Commander of the South Pacific Division, Corps of Engineers; the Regional Administrator of the Environmental Protection Agency, Region IX; the Chair of the San Francisco Bay Regional Water Quality Board and the Chair of the San Francisco Bay Conservation and Development Commission agreed to jointly undertake the development and implementation of a Long Term Management Strategy (LTMS) for dredging and disposal of dredged materials from the region. Based on the outputs from the LTMS, the Regional Water Quality Control Board (RWQCB) and the Bay Conservation and Development Commission (BCDC) will consider modifications to the dredging elements of their respective Basin and Bay Plans for San Francisco Bay.

**Regulatory Streamlining:** Besides identifying implementable disposal options, the LTMS will: (1) develop coordinated regional disposal policies between federal and state agencies; (2) provide a required

decision-making framework for dredging and disposal projects; (3) streamline existing permit and testing procedures; and (4) provide a long term site monitoring apparatus and feedback mechanism.

**Operations during fiscal year.** In 1994, the Environmental Protection Agency (EPA) designated a deep ocean disposal site. In 1996, the Corps, EPA, and the State of California implemented a joint agency Dredged Material Management Office (DMMO) for dredging permit processing.

The Final LTMS EIS was finalized in October 1998 and the Record of Decision was signed in July 1999. The EIS identified Alternative 3 as the preferred alternative which would limit future dredged material disposal to 20% in the San Francisco Bay, 40% in the ocean, and 40% for upland beneficial reuse. ROD initiated implementation for Federal agencies.

In December 2001, the South Pacific Division Commander, EPA's Region IX Administrator, Chairmen of the San Francisco Bay Regional Water Quality Control Board, Chairwoman of the San Francisco Bay Conservation and Development Commission and the Executive Committee of the State Water Resources Control Board, as the members of the LTMS Executive Committee, approved the final LTMS Management Plan, directing implementation of the program. Adoption of the management plan will require amending the Bay and Basin Plans. BCDC amended the San Francisco Bay Plan in December 2000 and the RWQCB amended the San Francisco Basin Plan in June 2001.

In general, the first phase of implementation will focus on the completion of the Corps Regional Dredge Material Management Plan for San Francisco Bay, with a future project-by-project analysis for "practicability" in terms of fiscal and environmental impacts, that would then be assembled as a regional composite EIS. This effort was initiated in October 2001. Activities in FY 03 consisted of: initiating the Methyl Mercury Phase 2 effort to delineate means and formation; completing the RDMMP "roadmap" and contract scope of services; conducting a study on the spatial characterization of suspended sediment plumes during dredging operations through acoustic monitoring; and development of a detailed work plan to assess science data needs for all sensitive fish species for which there are environmental windows in San Francisco Bay.

## **10. RECONNAISSANCE AND CONDITION SURVEYS**

Reconnaissance and condition surveys of channels to be dredged in years other than Fiscal Year 2003 and jetty structures were conducted on the following projects: Berkeley Breakwater; Bodega Bay; Crescent City Harbor; Fisherman's Wharf Breakwater; Larkspur Ferry; Mare Island Strait; Napa River; Noyo River; Petaluma River; Pillar Point; Pinole Shoal; Redwood City; Richmond Harbor; San Francisco Marina; San Leandro Marina; San Rafael; and Suisun Channel; all in California. Fiscal year costs were \$894,851.

## **11. NAVIGATION WORK UNDER SPECIAL AUTHORIZATION**

**Navigation activities pursuant to Section 107, Public Law 86-645 (preauthorization).**

Fiscal Year total costs were \$99,015 of which \$9,991 was for Section 107 Coordination Account; \$5,160 for Pillar Point Harbor, CA.; and \$83,864 for Oyster Point Harbor, CA.

**Mitigation of shore damages activities pursuant to Section 111, Public Law 90-483 (preauthorization).**

None.

## **12. BEACH EROSION CONTROL WORK UNDER SPECIAL AUTHORIZATION**

**Beach erosion control activities pursuant to Section 103, Public Law 87-874 (preauthorization).**

Fiscal year total costs were \$344,499 of which \$254,525 was for East Cliff Drive, Santa Cruz, CA.; \$29,877 for Pacific Grove Shoreline Protection, CA.; \$47,731 for Pacifica State Beach, CA.; \$11,532 for Cliff Drive, Capitola, CA; and \$834 for Hook Area Bluff Stabilization, CA.

### **Flood Control**

## **13. CORTE MADERA CREEK, CA**

**Location.** Creek and tributaries drain an area of 28 square miles in Marin County, CA, and flow into west side of San Francisco Bay about 9 miles north of Golden Gate.



**Existing Project.** Provided for about 11 miles of channel improvements, including realignment, enlargement, levees, riprap, rectangular concrete sections, interior drainage facilities, bridge relocations, and debris removal on Corte Madera Creek and lower reaches of its tributaries, and a continuous channel rights-of-way to deep water in San Francisco Bay reserved to assure channel outlet in the event of future tideland reclamation. Water Resources Development Act of 1986 modified existing project to direct construction of Unit 4 from Lagunitas Road Bridge to Sir Francis Drake Boulevard, and to include construction of -flood proofing measures as necessary to individual properties and other necessary structural measures in vicinity of Lagunitas Road Bridge to ensure proper functioning of completed portions of authorized project. Portion of project upstream of Sir Francis Drake Boulevard previously classified inactive was modified on November 17, 1986 to eliminate any channel modification. Current project has 3 miles of channel enlargement and levees, about 1.8 miles of rectangular concrete channel improvements, and 450,000 cubic yards of redredging on lower Corte Madera Creek.

**Local Cooperation.** Local interests must provide lands and rights-of-way, including suitable areas for disposal of waste material, modify or relocate all bridges and utilities necessary for construction and maintenance; hold and save the United States free from damages due to the construction works; maintain and operate the project after completion in accordance with the regulations prescribed by the Secretary of the Army, and prevent encroachment on flood channels that would result in decreasing the effectiveness of project for flood control; adjust all claims regarding water rights that might be affected by the project; and contribute in cash 1.5 percent of Federal construction cost of Ross Valley units 1-4 and tidal areas. Marin County Flood Control and Water Conservation District previously furnished resolution of local assurances dated March 29, 1966, March 28, 1967, August 15, 1967, and July 8, 1969, and Marin County Board of Supervisors reaffirmed by letter dated September 28, 1978. Project was authorized by the State of California by 1965 Statute, Chapter 1388. Board of Supervisors of Marin County Flood Control and Water Conservation District furnished assurances of willingness and ability to meet requirements for portion of project below Sir Francis Drake Boulevard.

On December 13, 1983, Marin County Board of Supervisors reconfirmed assurances of local cooperation because a Superior Court judgment ordered that county to take all steps required by law to complete channel downstream of Sir Francis Drake Boulevard (Unit 4) and maintain entire project as agreed. A Local Cooperation

Agreement for redredging the lower reach of Corte Madera Creek was executed on June 29, 1985. Marin County also provided support for Ross Valley Unit 4 by resolution on March 24, 1987 and by the resolution on September 13, 1988.

The General Reevaluation Report (GRR) was initiated in February 1999. As long as the originally authorized project remains the recommended project, the 1966 authorized cost sharing and financing requirements will be applicable. A community-based Design Advisory Committee has been created with representatives from Ross, Kentfield, Corte Madera, and Larkspur to provide community input on the conceptual plan. The conceptual plan is based on the Marin County Board of Supervisors' Design Guidelines for a consensus plan which was approved in 1996.

The GRR will be developed in two phases. Phase I will develop alternatives based on the design guidelines and determine if the project benefits exceed the costs. Phase II will complete the GRR and environmental documentation. Design and construction of Unit 4 and attendant features in the downstream units will be determined by the GRR. The communities of Corte Madera, Larkspur, Kentfield, and Ross reviewed the alternatives screening conference report summarizing Phase I during 2000. The non-Federal sponsor, Marin County Flood Control District 9, collected community resolutions passed in 2000 and 2001, and in April 2001 made a consolidated recommendation on the locally prepared plan.

**Operations during fiscal year.** New Work: The flood control project has been built in separate units. The current project focuses on the design and construction of unit 4 with modifications to units 2 and 3. Unit 4 includes a natural flood control channel and a sedimentation basin located at the town of Ross.

Work on GRR Phase II began based on the locally preferred plan. Early activities assured that the plan could be implemented without damaging a historic bridge, but also noted the bridge's vulnerability to seismic activity. A related study sketched the impacts to traffic circulation from construction of a bypass culvert. As a result of the studies, local authorities and the sponsor may amend the design criteria for the project. Further work on GRR Phase II is on hold pending official notification of design criteria changes. Work could return to GRR Phase I to screen alternatives in accordance with any amended design criteria. The GRR schedule will be adjusted once the official notice of changes is made.

**Historical summary.** Project responsibility was transferred to Sacramento District on April 1, 1982 and back to the San Francisco District on October 1, 1996. Resolution 96-26 was passed on February 1, 1996 by the Marin County Board of Supervisors in support of a 40-year project.

Project is about 77 percent complete considering the portion being held in abeyance upstream of Sir Francis Drake Boulevard. Work remaining: Design construction of the remaining 3,000 feet of channel downstream of Sir Francis Drake Boulevard and Ross Creek. The portion of Corte Madera Creek upstream of intersection of Sir Francis Drake Boulevard and Corte Madera Creek in Ross, near the city of San Anselmo, was classified as "inactive" on July 11, 1984, due to lack of local support.

A Local Cooperation Agreement for redredging lower reach of Corte Madera Creek was executed June 29, 1985. Construction on Lower Corte Madera Creek Channel was completed and transferred to Marin County Flood Control and Water Conservation District by letter of May 28, 1987, San Francisco District monitors maintenance and operation of the project. The project was transferred from Sacramento District in October 1996. Design process began in the San Francisco District to complete Unit 4.

## **14. PETALUMA RIVER, CA**

**Location.** The Petaluma River Basin is situated in the Sonoma and Marin Counties, California, on the northwestern shore of San Pablo Bay. The project site extends upstream approximately 500 feet from Lynch Creek to the spur line Railroad Bridge located approximately 600 feet downstream of the Lakeville Street Bridge.

**Existing project.** The project was re-authorized under Section 112 of the Water Resources Development Act of 2000. The scope of the project consists of constructing the U-shaped channel, an earthen trapezoidal channel including the channel excavation and widening, the two hundred (200) feet concrete constriction weir, an approximately one – mile – long sheet pile flood / retaining wall along both sides of the main channel, two (2) storm drain pump stations, twelve (12) storm drain outlet structures in various locations of the channel, two (2) large mitigation areas including planting in the embankment slope throughout the project site, two hundred (200 ) feet long transition channel work, replacing two (2) vehicular bridges and two (2) railroad bridges, and demolishing the existing railroad wood trestle.

Present estimated cost of the project is \$39,660,000 of which \$24,992,000 is Federal cost and \$14,668,000 is non-Federal cost.

**Local cooperation.** The project was executed based on the original Petaluma River Project Cooperation Agreement in July 1996 under the continuing Authorities Program, Section 205 – Small Flood Control Projects. The project costs have exceeded the Continuing Authorities Program cost limits and was specifically authorized in WRDA 2000, Section 112. Further, Congressional direction in the House Report 106-693 accompanying the Energy and Water Development Appropriations Bill 2001 provides guidance to the Corps to utilize the available federal funds to continue project construction.

**Operations during fiscal year.** New work: The construction of Contract #1 for the U-shaped channel portion was completed in December 1998. The construction of the Payran Bridge and Lackville Bridge was completed under the local sponsor's contract in 1996 and 1998, respectively. The construction contract #2 for the trapezoidal channel was awarded in May 1999. The features of work in contract #2 completed in September 2000 included the floodwall/retaining wall in both sides of the channel, the channel widening and excavation, the constriction weir, the flood control features including the two (2) Storm Pump Stations and the storm drain outlets and the mitigation planting throughout the project site. Contract #2 was completed in May 2001. The remainder of the work to be completed including the correction of the mitigation areas in the Homlberg site to be included in Contract #3. The mainline Railroad Bridge, one of the two railroad bridges under construction by the local sponsor's contract, was completed early April 2001. Contract #3 for the Channel Transition completed in April 2002, Contract #4 for the mainline railroad approach, including the demolition of the existing railroad wood trestle is scheduled for completion in Nov 04. Contract 5A, channel excavation under the Payran and Lakeville bridges and installation of emergency generator at the Payran Pump Station was completed in May 03. Contract 5B, slide repair to trapezoidal channel was completed in September 2003. Contract #6 for installing the Industry track to replace the downstream trestle scheduled for award in June 2004. Channel excavation in the U-shaped channel area scheduled to complete in September 2005. Maintenance: Operations and maintenance of Petaluma River Channel including engineering and design. Condition survey was performed in February 2002. Operations and maintenance dredging of the Petaluma River Channel was completed in October 2003.

## **15. RUSSIAN RIVER BASIN, CA**

**Location.** Russian River rises in Coast Range in northwestern California, flows southerly for 87 miles, and then turns westerly to flow for 23 miles to Pacific Ocean at Jenner, 60 miles northwest of San Francisco, CA. (For general location see Geological Survey map for California.)

**Existing project.** Active authorized project provides for construction of a dam on East Fork of Russian River at Coyote Valley to a height of 160 feet; a dam on Dry Creek at Warm Springs to a height of 319 feet; and channel stabilization works on Russian River between mouth and mile 98, on lower reaches of several tributaries, and on Dry Creek downstream from dam. Project also provides for expansion of fish hatchery capacity at Dry Creek, Warm Springs, to compensate for fish losses on Russian River attributed to operation of Coyote Dam component of project. Coyote Valley Dam (Lake Mendocino), completed in 1959, and Warm Springs Dam (Lake Sonoma), completed in 1983, are operated and maintained by the California Department of Fish and Game. (See tables 34-I and 34-J for latest approved estimated costs).

**Local cooperation.** Fully complied with for Coyote Valley Dam and channel improvements accomplished to date. For the Dry Creek portion, local interests are required by the authorizing act to comply with the usual a., b., c. requirements for channel improvements and, in addition, prevent any encroachment in the channel of Dry Creek which would interfere with proper functioning of the channel improvement works; adjust all claims concerning water rights arising from the construction and operation of the improvements, including acquisition of water rights needed for preservation of fish and wildlife resources affected by the project; and reimburse the United States in accordance with the Water Supply Act of 1958, as amended, for that part of the joint-use construction cost, (30.2 percent currently estimated at \$103,760,000) and an ultimate 32.5 percent of the annual operation, maintenance, and replacement joint-use costs allocated to municipal and industrial water supply. The estimated annual cost to local interests for maintenance of channel improvement works is \$80,000. Sonoma County Water Agency (formerly Sonoma County Flood Control and Water Conservation District) provided assurances of willingness and ability to meet requirements by Resolutions No. DR 00793-1, September 25, 1961, No. DR 4770-1, December 17, 1962 and No. DR 45759, August 5, 1974, for Dry Creek (Warm Springs) Lake and Channel. By letter dated March 7, 1967, Sonoma County Flood Control and Water Conservation District further indicated their interest in optimization of the Dry Creek (Warm Springs) damsite to provide additional water supply storage. Reimbursement to the United States for Dry

Creek (Warm Springs) Lake and Channel costs allocated to 212,000 acre-feet of water supply storage is specified in a water supply contract with the local sponsor approved in October 1982. Local interests have expended approximately \$1,000,000 to provide partial flood protection in project area and have constructed facilities at an approximate cost of \$20,000,000 to distribute water from the completed Coyote Valley reservoir.

**Operations and results during fiscal year.** New work: Coyote Valley Dam: Replaced SST toilets with new vault toilets and ordered two more CXT prefabricated restrooms for FY 04. Other work included modifying existing sewer system to reduce the number of confined space entry areas, completed wooden water tanks with steel at Kyen & Bushay campgrounds and Overlook day-use area; repaving roads at Overlook, Mendocino Drive Road, and Southboat Ramp Parking lot; and repaired the emergency slide gate in the control tower. New playground equipment was installed in the Cha-Ka-Ka Campground. Dry Creek (Warm Springs) Lake and Channel: Engineering activities continued. Major work includes repairing the Liberty Glen Campground Entrance Road using ERFO funds and the stabilization of the Control Tower Access Road. Maintenance: Coyote Valley Dam: Operation and maintenance continued. Structures were maintained in serviceable condition. Runoff of East Fork Russian River at Coyote Dam was dry for the year. Maximum storage of 92,109 acre-feet occurred on May 1, 2003. Maximum hourly inflow to reservoir was 6,847 cubic feet per second on December 16, 2002. Maximum release of 2,034 cubic feet per second occurred on January 14, 2003. During the year, 101,743 acre-feet were released for flood control, and 127,513 acre-feet were released for irrigation and other purposes. Dry Creek (Warm Springs) Lake and Channel: Operation and maintenance continued. Structures were maintained in serviceable condition. Runoff of Dry Creek at Warm Springs Dam was dry for the year. Maximum storage of 265,877 acre-feet occurred December 31, 2002. Maximum hourly inflow to reservoir was 23,229 cubic feet per second on December 16, 2002. Maximum release of 3,023 cubic feet per second occurred December 31, 2002. During the year, 79,475 acre-feet were released for irrigation and other purposes. Releases for flood control amounted to 138,544 acre-feet.

**Historical summary.** Entire project, exclusive of recreation facilities at completed project (Lake Mendocino), is about 99 percent complete. Coyote Valley Dam, initiated November 1958, was completed April 1959 (cost \$17,550,000, of which \$11,952,000 was Federal; and \$5,598,000 contributed). Work, including removal of slides resulting from storms in 1958, was completed April 1959. Bank stabilization work on Russian River near Geyserville

was completed in 1957 and channel improvements in remaining reaches on Russian River and East Fork of Russian River were completed in 1974 (cost \$2,483,900). In April 1982, responsibility was transferred to the Sacramento District. Responsibility for civil works operations & maintenance functions for the two projects was transferred back to San Francisco District October 1, 1996.

Warm Spring construction completion include fish hatchery in December 1980, project overlook in May 1981, reservoir clearing in July 1981, downstream stabilization sills in October 1981, dam closure in October 1982, spillway repair at Warm Springs Dam in September 1985, boat launching facilities, Phase I, in September 1985, Rockpile Road Upgrade, Yorty Creek Beach, and remedial work at Liberty Glen camping area in September 1990, fish hatchery expansion in September 1992, final control tower grouting, dam access road repair, spillway stabilization, fish hatchery emergency water supply in September 1993, and Liberty Glen wastewater system and contaminated soil remediation.

Initial filing of Warm Springs reservoir was commenced on November 1, 1984. Responsibility for construction was transferred to Sacramento District in August 1983. Dam safety assurance studies were initiated at Coyote Valley Dam in fiscal year 1984. Responsibility for civil works operations and maintenance functions for the two projects was transferred back to San Francisco District October 1, 1996.

## **16. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS**

Section 3, Flood Control Act of June 22, 1936, as amended and supplemented, included a requirement that local interests maintain and operate completed flood control works in accordance with regulations prescribed by the Secretary of War. Inspections made throughout the year to determine effectiveness of operation and maintenance by local interests of completed local protection projects and works constructed under emergency and special authorities of Sections 205 and 208 of the 1948 Flood Control Act, Section 14 of the 1946 Flood Control Act, and Public Law 99, 84th Congress. In addition, encroachments to Federal Projects such as new bridges, etc. must be reviewed and approved prior to construction by the local sponsor, as well as in compliance with the Clean Water Act permit and endangered species concerns regarding their operations and maintenance activities. Fiscal year cost was \$199,667. Total cost to September 30, 2003 was \$3,888,850. See Table 34-H for inspections made this fiscal year.

## **17. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION**

### **Flood Control activities pursuant to Section 205, Public Law 858, 80th Congress, as amended (preauthorization).**

Fiscal year costs were \$551,440 for preauthorization studies of which \$29,703 were for Alhambra Valley Estates, CA; \$286,481 for San Pedro Creek, Pacifica, CA; \$138,205 for White Slough, Solano County, CA; \$2,012 for Novato Creek Tributary, Novato, CA; \$12,794 for Coyote Creek at Rock Springs, CA; \$9,986 for Section 205 Coordination Account; \$4,074 for Bay Front Canal, CA; and \$444 for Mare Island, CA; \$9,753 for Santa Venetia Pumping Plant, CA; \$29,127 for San Pablo Creek, CA; \$25,322 for Las Gallinas Creek; \$2,270 for San Francisquito Creek, CA; and \$1,269 for Howell Mountain Flood Protection, CA.

### **Emergency flood control activities-repair, flood fighting and rescue work (Public Law 99, 84th Congress, and antecedent legislation).**

Fiscal year cost incurred for emergency flood control activities were \$532,492 of which \$480,816 were for Disaster Preparedness; \$5,000 for Emergency Operations and \$46,676 for Rehabilitation.

### **Emergency bank protection (Section 14, 1946 Flood Control Act, Public Law 526, 79th Congress).**

Fiscal year total costs were \$8,460 of which (\$400) was for Indian Island, Humboldt County, CA; and \$8,860 for Section 14 Coordination Account.

## **18. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS**

In accordance with sec. 7, Flood Control Act of 1944, summaries of monthly reservoir operations at Del Valle, CA were prepared. No water control manual revisions were completed due to environmental issues. Corps personnel provided advice as requested during flood control operations at the reservoir. Fiscal year cost was \$53,079.

## **19. MISCELLANEOUS WORK UNDER SPECIAL AUTHORIZATION**

### **Project Modification for Improvement of Environment (Section 1135, PL 99-662).**

Fiscal year total costs were \$390,083 of which \$9,999 was for Coordination Account; and \$230,068 for Wildcat Creek Restoration, CA.; \$67,070 for Alameda Creek, CA.;

\$43,240 for Pinole Creek Restoration, CA; \$33,624 for Warm Springs Dam Hatchery Modification, CA; \$6,086 for McNear Peninsula Habitat Restoration, CA; and (\$4) for Preliminary Restoration Plan, CA.

**Aquatic Ecosystem Restoration (Section 206, PL 104-303).**

Fiscal year total costs were \$669,852 of which \$10,487 was Coordination Account funds; \$87,226 for American Canyon Creek, CA; \$98,021 for Pavon Creek Restoration, CA; \$487 for Novato Creek Antenna Field Restoration; \$4,010 for Santa Clara Valley Aquatic Restoration, CA; \$35,346 for San Pedro Creek, Aquatic Restoration, CA; \$24,411 for Salt River Restoration, CA; \$288,621 for Upper York Creed Dam Removal, CA; \$5,488 for Larson Park, CA; \$77,274 for McInnis Park Restoration, CA; \$25,145 for Sulphur Creek Restoration, CA; \$9,251 for Simmons Slough, CA; and \$4,085 for St. Helen-Napa River Restoration, CA.

**Environmental Improvement**

**20. HAMILTON AIRFIELD WETLANDS RESTORATION, CA**

**Location.** The Hamilton Wetland Restoration project is located at the former Hamilton Army Airfield south of the city of Novato, California.

**Existing project.** The project calls for restoration of approximately 1,000 acres of habitat that includes coastal salt marsh, seasonal wetlands, tidal channels and intertidal habitats. The project will provide habitat for endangered species such as Chinook salmon, California clapper rail, brown pelican, California black rail and salt marsh harvest mouse. The wetlands will also support shorebirds and waterfowl migrating along the Pacific Flyway. The wetlands and associated habitats that will be restored are especially valuable due to the scarcity and declining amount of this habitat type in California and the dependence of listed threatened and endangered species on this unique resource.

More than 10 million cubic yards of dredged material is needed for the project. About 2.5 million cubic yards of material will come from the Port of Oakland's -50-foot harbor deepening project. The remaining eight million cubic yards of material will come, primarily, from other local and federal operation and maintenance projects around San Francisco Bay. Dredged material will be tested to ensure that it is suitable for wetlands construction.

Use of the material for wetlands restoration also avoids the necessity of disposing of it elsewhere in the bay or in the ocean, consequently wasting a resource that can be better used for habitat restoration. This concept is part of the Long Term Management Strategy for the disposal of material dredged from San Francisco Bay. This strategy was created in partnership with federal and state agencies, navigation interests, fishermen, environmental organizations and the general public in 1990, to develop long-term solutions and policies for dredged material disposal that favor reuse. The project will be built using a phased approach that coincides with the availability of real estate parcels and dredged material. Initial geotechnical investigations to characterize soil properties began in late October 2001, as part of the Pre-construction Engineering and Design Phase of the project. In January, construction was completed on the first 1,700 feet of pipeline that will eventually stretch some 34,000 feet and carry the dredged material to various locations at the wetlands restoration site.

The next phase of the wetlands project will include removal of derelict buildings and preparation of the site to receive dredged material. The marsh-crossing pipeline will then be extended far into the deep water of San Pablo Bay where a hydraulic off-loader will be constructed. The off-loader will be used to pump dredged material, which will arrive on barges from bay dredging projects, to the restoration site. Internal berms and levees will be constructed on the airfield parcel to contain the slurried sediment. Once all the sediment has been placed on the site and the residual water drained from the site, the bayward levee will be breached and the waters of San Francisco Bay will be allowed once again to flow across the land.

The project cost is \$63,900,000 of which \$47,900,000 is Federal cost and \$16,000,000 is non-Federal cost (includes \$5,200,000 Port of Oakland costs according to Oakland Project Cooperation Agreement).

The existing project was authorized in the Water Resources Development Act of 1999. Public Law 106-53 authorizes the Secretary of the Army to implement an ecosystem and wetland restoration project at the Hamilton Army Airfield and adjacent properties, City of Novato, Marin County, California.

**Local cooperation.** In accordance with the cost sharing and financing concepts reflected in the Water Resources Development Act of 1986, the local sponsor must comply with the following requirements: (1) pay 25 percent of the total project cost and (2) provide all lands and easements, rights-of-way, and relocations necessary for the project. The value of lands, easements, rights-of-way, and relocations can be credited toward the payment required

under item (1) above.

**Operations during fiscal year.** The Port of Oakland has completed initial construction of 1700 feet of the off loader pipeline, which will be extend another 30,000 feet onto the project site. Site preparation and construction of the off loader facility began in September 2003 after the transfer of the Army BRAC parcel to the State of California has been completed. Project is expected to receive first dredge material in June of 2005.

## **21. SAN RAMON VALLEY RECYCLED WATER, CA**

**Location.** The project is located in the San Ramon Valley, Contra Costa and Alameda Counties, approximately 25 miles east of San Francisco, California.

**Existing project.** The project runs from Danville south to Dublin. The project will include design and construction of 8 pump stations, 8 storage reservoirs, and 135 miles of pipeline. The total project cost is \$150,000,000 of which \$15,000,000 is Federal cost and \$135,000,000 is non-Federal cost. The district is currently involved in the design of one pump station and 2 miles of pipeline. The current project estimate for this design is \$560,000 and is comprised of Federal cost (Corps) of \$420,000 and non-Federal cost of \$140,000. The existing project was authorized in the Water Resources Development Act of 1999, Section 502, b (42).

**Local cooperation.** A Design Agreement was signed with the local sponsor, East Bay Municipal Utilities District, in November 2002.

**Operations during fiscal year.** Investigations were conducted in FY 2003 to identify property that could be purchased by the sponsor as a site for the pump station. A contract was awarded in August 2003 for the preliminary design of the pump station. Completion of final design is anticipated in FY 2004.

## **General Investigations**

### **22. SURVEYS**

Fiscal year costs for surveys were \$2,461,579 of which \$172,461 were for navigation studies; \$553,100 for flood damage prevention; \$52,169 for shoreline protection studies; \$1,629,237 for special studies; \$30,388 for miscellaneous activities; and \$24,224 for coordination studies with other agencies.

### **23. COLLECTION AND STUDY OF BASIC DATA**

Fiscal year total costs of \$35,711 were incurred, of which \$35,292 was for Flood Plain Management Service Program and, \$419 for Hydrologic Studies.

### **24. PRECONSTRUCTION ENGINEERING AND DESIGN**

#### **LLAGAS CREEK, CA**

The Llagas Creek Flood Control Project is located in southern Santa Clara County, California, in the vicinity of the communities of Morgan Hill, San Martin, and Gilroy. Llagas Creek is a conduit to the Pajaro River and the Monterey Bay for a 104-square mile watershed around Morgan Hill and Gilroy. The creek system is especially prone to flooding, having recorded floods in 1937, 1955, 1962, 1963, 1969, 1982, and in 1997. Primarily, the project consists of channel improvements and a diversion channel providing a 100-year level of protection to urban areas and 10-year protection to agricultural areas.

The Llagas Creek Flood Control Project is separated into 14 reaches. Of these, the Natural Resources Conservation Service (NRCS) completed Reaches 1, 2, 3, 9, 10, 11, 12 and 13 and prepared preliminary designs for the remaining reaches (1967). The Water Resources and Development Act (WRDA) of 1999 authorized the Corps of Engineers to complete the remaining reaches of the project "substantially in accordance with the NRCS plans". A re-evaluation of these designs was necessary due to the changes in the environmental habitat within these reaches, overall watershed use, and Federal and State law. Preliminary designs of the unconstructed reached have been prepared and the supplemental EIS/R has been initiated. Construction of the remaining reaches is forecast to begin in FY 06.

#### **NOYO RIVER AND HARBOR, CA**

Noyo River rises in the Coast Range, flows westerly, and empties into Noyo Harbor. Noyo Harbor is a cove on the California Coast about 87 miles south of Humboldt Bay and 135 miles northwest of San Francisco. The 1962 Rivers and Harbors Act, modified by the 1976 Water Resources Development Act, authorized up to two breakwaters as necessary to provide protection. The 1976 Water Resources Development Act, as modified by the Water Resources

Development Act of 1986, authorized construction of additional channel improvements. Recommended plans of improvement for the breakwater and channel improvement were previously considered as a single project. Due to significant differences in the time required for planning and construction, each part is now reported separately.

The plan of improvement for Noyo River and Harbor (Breakwater), CA provides for one detached offshore 400-foot breakwater aligned in a north-south direction along the southern portion of Noyo Cove, west of the entrance channel in Noyo Harbor. The plan also provides for a 60-foot wide channel, 7 feet deep, for a distance of about 3,000 feet upstream from the end of the existing Federal project to the Dolphin Isle Marina. The June 1995 draft GDM estimated the breakwater cost at \$23,312,000 of which \$18,712,000 is Federal cost and \$4,600,000 is non-Federal cost. Subsequent to the draft GDM, the Conference Report on H.R. 1905, Energy and Water Development Appropriation Act of 1996 directs the Corps to investigate the viability of a pre-fabricated steel structure in lieu of a rubble mound breakwater, including modeling. A special report, which documented this evaluation, was completed in January 1997. A meeting with the Local Sponsor, PG&E and the City of Fort Bragg was held 5 February 1997 to discuss the Corps' findings. Integrating wave power generation to the breakwater does not decrease the Sponsor's annualized cost because the Sponsor is required to pay all costs associated with power generation. Two letters from the Noyo Harbor District, dated 26 February 1997, requested the Corps finalize the GDM and discontinue study of integrating wave power generation into the breakwater. Due to sponsor's inability to fulfill its cost-sharing requirements, preparation of a final GDM was terminated.

This project has been put in an inactive category at the request of the sponsor.

### **PAJARO RIVER AT WATSONVILLE, CA**

The Pajaro River is the dividing line between Santa Cruz and Monterey County located approximately 100 miles south of San Francisco on Monterey Bay. Flooding in the city of Watsonville, the town of Pajaro, and surrounding agricultural lands prompted a re-examination of flood damage prevention in the Pajaro basin.

The project provides for modification of the existing levee system built by the Corps in 1949 and includes 2.5 miles of flood control levees and/or floodwalls on Salsipuedes Creek and Corralitos Creek, tributaries of the

Pajaro River, as well as pump systems located outside of existing levees on the Pajaro River. The tributaries are located 6 miles from the river mouth. Since the only alternative with Federal interest was within the existing 1966 Rivers and Harbor Act construction authority, the reconnaissance study was certified in August 1994 with the recommendation to proceed directly to a General Re-evaluation Report (GRR) on raising levees along a portion of Corralitos and Salsipuedes Creeks. Flooding along the main stem of the Pajaro River in January and March 1995 caused in excess of \$65,000,000 in damages. Additional damages were incurred during the floods of January 1997 and February 1998. The main-stem was, therefore, incorporated into the ongoing GRR for the creeks.

The Corps has identified NED plans for both the main-stem and the creeks. The non-Federal sponsors, the counties of Santa Cruz and Monterey, have carried out a public consensus building process to develop locally preferred plan (LPP) which is acceptable to both agricultural and environmental interest. The Corps of Engineers supports this process by providing technical expertise and, when the process concludes, will incorporate the LPP with the NED as the recommended plan that will go forward into detailed design in the GRR. Contingent on funding, the GRR would be completed in FY 05 and construction could begin by early FY 06.

### **SAN RAFAEL CANAL, CA**

San Rafael Canal, also known as San Rafael Creek, is located on the northwestern shoreline of San Francisco Bay in the city of San Rafael, about 17 miles north of the city of San Francisco. The Canal is a shallow-draft, mainly light commercial and recreational, channel consisting of two distinct sections, the Inner Canal channel and the Across-the-Flats channel. San Rafael's central business district and dense residential areas surround the Inner Canal section while the Across-the-Flats portion traverses San Francisco Bay to reach deepwater.

A study was authorized by a resolution adopted by the Committee on Public Works and Transportation of the United States House of Representatives on August 8, 1984, Section 142 of the Water Resources Development Act (WRDA) of 1976 (Public Law 94-587), as subsequently amended in Section 705 of WRDA of 1986 (Public Law 99-662) to examine alternatives to prevent damage caused by storm and tidal flooding in the central San Rafael area. The project was authorized for construction in Section 101 of WRDA of 1996.

The Feasibility Study recommended the South Floodwall Plan. This plan consists of approximately 9,500 linear feet of floodwall constructed along the south bank of the canal and 1,600 feet of sheet-pile floodwall along the crest of the Bayfront levee on the east side of the canal ways tract. The South Floodwall Plan has a benefit-to-cost ratio of 2.0 to 1. The estimated project cost is \$32,200,000 of which \$20,930,000 is Federal cost and \$11,270,000 is non-Federal cost. Preconstruction Engineering and Design was initiated in October 1992. The Corps proposed a continuous floodwall design to replace the South Floodwall Plan, which was estimated to save between \$11.6 to \$14.1 million compared to the South Floodwall Plan, as recommended in the Feasibility Study. A letter was sent to the City of San Rafael in December 1996 requested Sponsor's agreement with the Corps proposal to finalize the project design based on the continuous floodwall concept. A District Engineer letter to the Mayor, City of San Rafael, dated 25 September 1997, informed the City that the project has been placed in a suspended status.

**Operations during fiscal year.** The operations and maintenance schedule provides for a 4-year maintenance dredging cycle for the Inner Canal channel and a 7-year cycle for the Across-the-Flats channel. Depths are -6 feet Mean Lower Low Water (MLLW) and -8 feet MLLW respectively. Maintenance dredging of the Inner Canal portion had been scheduled for FY 02 but was delayed to October 2002 because the dredge material was discovered to be unsuitable for aquatic disposal. An upland site, Winter Island, was later identified near Antioch, California. Cost sharing is in accordance with the Water Resources Development Act of 1996. Dredging of the Inner Canal was completed in April 2003. Quantities removed during this latest cycle were 78,000 cy; of which 44,500 cy was disposed in-by while 33,500 cy was disposed upland at Winter Island.

## **UPPER GUADALUPE RIVER, CA**

The Upper Guadalupe River Feasibility Study area is located in the City of San Jose, Santa Clara County, California. The reach of the river proposed for improvement begins at interstate Highway 280 at the edge of downtown San Jose and extends south for about 5.5 miles.

The feasibility study evaluated a variety of non-structural and structural plans of improvement for flood protection in the Upper Guadalupe basin. The final feasibility study report and Environmental Impact Statement/Report was submitted to South Pacific Division on January 30, 1998. This report recommended Federal participation in a project providing a 50-year level of flood

protection. The locally preferred plan, presently requiring additional sponsor (Santa Clara Valley Water District (SCVWD)) funding, would provide a 100-year level of protection. The Division Engineer's Public Notice was issued on February 27, 1998 and a Chief of Engineer's Report was signed August 19, 1998. The project has been authorized for construction in the 1999 Water Resources Development Act.

The Design Agreement for the follow-on Preconstruction Engineering and Design (PED) phase was signed on February 25, 1999. PED was initiated in April 1999. PED is scheduled to complete by the end of November 2004.

A letter addressed to the ASA (CW) from the Deputy Director of Civil Works dated 12 October 2000 recommended that additional studies be conducted during the PED phase to confirm the actual NED plan. The letter stated that there was potential for the Locally Preferred Plan (LPP) plan to be the NED plan "based on all economic and environmental benefits, and impacts on endangered species." A Limited Re-evaluation Report (LRR) summarizing the additional studies will be submitted to HQUSACE in March 2004. The report still identifies a NED plan that provides 50-years level of protection but is fully mitigated for environmental impacts and endangered species. The LRR will recommend the implementation of the LPP as the authorized plan and recommend an exemption by the ASA (CW) for full Federal participation. A total project cost is being finalized but is approximately \$212 million. SCVWD is requesting a Section 215 Agreement for construction of Reach 10 B. This reach has environmental mitigation, which should be completed before construction of other reaches to help ensure that mitigation commitments are met, including mitigation of thermal impacts on a threatened fish species. The Section 215 agreement will allow the Corps to begin major construction of the project one year earlier thus reducing the project costs and fully complying with environmental and endangered species regulations.

**Operations during fiscal year.** Completion of 65% design of the NED plans, completion of the studies to support modification of the LPP and NED plans, initiation of the LRR, and participation in the Guadalupe Watershed Integration Working Group (GWIWG). Water Certification under the CWA issued for the LPP plan.



**SAN FRANCISCO, CA, DISTRICT**

**TABLE 34-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003	
	Bodega Bay, CA	New Work						
		Approp.	-	-	-	-	1,226,765	1 2 40
		Cost	-	-	-	-	1,226,765	1 3 40
		Maint.						
		Approp.	95,044	248,803	319,761	758,413	2,696,227	4 40
		Cost	93,344	227,682	257,284	842,843	2,695,359	4 40
		Major rehab.						
		Approp.	-	-	-	-	397,779	5
		Cost	-	-	-	-	397,779	5
13.	Corte Madera Creek, CA (Federal Funds) (Contrib. Funds)	New Work						
		Approp.	329,000	305,000	393,000	104,000	14,547,725	62
		Cost	348,755	317,721	428,930	97,895	14,524,904	62
		New Work						
		Contrib.	-	-	-	-	190,355	63
		Cost	-	-	-	-	190,213	63
	(Contrib. Funds, Other)	New Work.						
		Contrib.	-	-	-	-	804,761	64
		Cost	-	-	-	-	804,761	64
1.	Crescent City Harbor, CA	New Work						
		Approp.	744,000	(135,000)	-	(395)	11,289,577	6 40
		Cost	526,892	311,953	-	-	11,289,577	6 40
	(Contrib. Funds, Other)	New Work.						
		Contrib.	249,290	(27,073)	-	-	222,217	
		Cost	-	222,216	-	-	-	
222,217		Maint.						
		Approp.	460,298	172,112	218,033	89,588	26,688,530	7 40
		Cost	242,621	371,311	205,034	121,064	26,688,518	7 40
		Major rehab.						
		Approp.	-	-	-	-	525,000	8
		Cost	-	-	-	-	525,000	8
	Fisherman's Wharf Areas, San Francisco	New Work						
		Approp.	-	-	-	-	9,199,000	41 48 50
		Cost	-	-	-	-	9,199,000	41 49 50
		Maint.						
		Approp.	11,882	3	15,233	2,152	417,758	51
		Cost	11,882	3	15,233	2,152	417,758	51
20.	Hamilton Airfield Wetland Restoration, CA (Contrib. Funds)	New Work						
		Approp.	538,000	2,176,000	2,778,800	2,110,000	7,677,800	
		Cost	467,633	1,072,184	3,829,546	2,098,838	7,535,194	
		New Work.						
		Contrib.	302,000	316,680	-	408,924	1,027,604	
		Cost	202,608	118,705	259,712	369,813	950,838	
2.	Humboldt Harbor and Bay, CA	New Work						
		Approp.	1,056,000	(1,284,298)	605,500	(788)	20,122,713	9 40
		Cost	3,353,115	(1,221,064)	616,900	(1,003)	20,121,674	9 40
	(Contrib. Funds)	New Work.						
		Contrib.	1,405,000	-	-	-	3,700,000	
		Cost	691,087	610,111	191,435	-	3,392,632	
		Maint.						
		Approp.	3,956,700	3,509,772	4,552,164	5,423,000	106,327,713	10 40
		Cost	3,963,217	3,491,137	4,404,007	5,591,927	106,327,713	10 40
	Klamath River, Klamath Glen Levee, CA	New Work						
		Approp.	-	-	(100)	-	557,900	65
		Cost	-	-	-	-	557,818	65
	Larkspur Ferry Channel, CA	Maint.						
		Approp.	3,240,000	(395,000)	1,245,000	118,380	4,208,380	
		Cost	131,396	2,660,792	7,914	1,391,817	4,191,919	
	Llagas Creek, CA	New Work						
		Approp.	465,000	825,000	488,300	543,000	2,321,300	
		Cost	203,610	1,002,001	549,830	536,210	2,291,651	

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 34-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003
	Moss Landing Harbor, CA	New Work					
		Approp.	-	-	-	-	338,215 <sup>11 40</sup>
		Cost	-	-	-	-	338,215 <sup>11 40</sup>
		Maint.					
		Approp.	525,347	90,127	1,615,721	1,084,500	12,748,421 <sup>12 40</sup>
		Cost	548,684	82,299	657,529	1,941,403	12,630,188 <sup>12 40</sup>
	Napa River, CA	New Work					
		Approp.	-	-	-	-	1,021,274 <sup>13 40</sup>
		Cost	-	-	-	-	1,021,274 <sup>13 40</sup>
		Maint.					
		Approp.	5,000	(52,184)	-	33,299	7,745,878 <sup>13 14 40</sup>
		Cost	53,423	(52,809)	2,258	37,528	7,745,878 <sup>13 14 40</sup>
	Noyo River and Harbor, CA	New Work					
		Approp.	-	(400)	-	-	4,120,600 <sup>15 16 40</sup>
		Cost	-	-	-	-	4,120,596 <sup>15 17 40</sup>
		Maint.					
		Approp.	857,713	126,608	49,199	3,639	10,457,294 <sup>18 19 40</sup>
		Cost	462,231	522,087	49,199	3,642	10,457,294 <sup>18 19 40</sup>
		Minor rehab.					
		Approp.	-	-	-	-	222,810 <sup>20 40</sup>
		Cost	-	-	-	-	222,810 <sup>20 40</sup>
3.	Oakland Harbor, CA	New Work					
		Approp.	(100,000)	(131,000)	-	(4,209)	93,167,475 <sup>21</sup>
		Cost	186,363	(189,288)	93,707	(32,631)	93,138,028 <sup>21</sup>
	(Federal Funds)	Maint.					
		Approp.	10,310,940	4,793,792	5,854,295	4,746,378	82,455,979 <sup>22</sup>
		Cost	10,410,524	4,726,744	4,358,050	6,192,355	82,338,627 <sup>22</sup>
	(Contrib. Funds)	New Work					
		Contrib.	-	-	-	-	23,446,184
		Cost	-	2,379	72,330	664	22,509,137
	Oakland Harbor 50', CA	New Work					
		Approp.	2,438,000	1,737,000	7,560,300	12,014,100	24,501,400
		Cost	2,427,815	1,711,369	7,675,758	11,980,458	24,446,980
	(Federal Funds)	New Work					
		Contrib.	365,189	6,100,000	-	5,250,000	12,539,529
		Cost	627,415	99,129	4,496,560	2,550,386	8,232,225
	Pajaro River at Watsonville, CA	New Work					
		Approp.	615,000	840,000	947,000	647,000	5,135,100
		Cost	507,590	832,166	1,030,757	678,767	5,130,369
14.	Petaluma River, CA	New Work					
		Approp.	-	2,990,000	7,051,000	1,571,000	16,824,082 <sup>23 40</sup>
		Cost	11,895	689,582	8,676,468	2,224,705	16,799,685 <sup>66 40</sup>
		Maint.					
		Approp.	175,966	88,663	2,132,815	1,326,952	20,403,934 <sup>24 40</sup>
		Cost	174,413	90,215	355,159	3,044,490	20,343,815 <sup>24 40</sup>
	(Contributed Funds)	New Work					
		Contrib.	4,535,000	-	(1,500,000)	-	9,154,300
		Cost	4,843,203	1,856,425	(1,485,255)	(1,440)	9,134,796
	Pillar Point Harbor, CA	New Work					
		Approp.	-	-	-	-	6,697,396 <sup>43 44</sup>
		Cost	-	-	-	-	6,697,396 <sup>43 44</sup>
		Maint.					
		Approp.	41,004	5,737	171,395	166,204	2,737,470 <sup>44 45</sup>
		Cost	41,004	5,737	143,913	193,645	2,737,429 <sup>44 45</sup>
	Redwood City Harbor, CA	New Work					
		Approp.	-	-	-	-	1,672,722 <sup>25 40</sup>
		Cost	-	-	-	-	1,672,722 <sup>25 40</sup>
		Maint.					
		Approp.	130,108	892,508	2,020,295	428,489	24,618,810 <sup>26 40</sup>
		Cost	129,394	843,957	1,936,048	562,003	24,618,810 <sup>26 40</sup>

**SAN FRANCISCO, CA, DISTRICT**

**TABLE 34-A (Cont'd)**

**COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003	
	Removal of Sunken Vessels	Maint. Approp. Cost	- -	- -	- -	- -	283,068 283,068	
4. Richmond Harbor, CA (Federal Funds)	New Work Approp. Cost	(150,000) 369,847	269,183 294,415	(2,000) -	- -	30,427,610 30,427,410	<sup>27 28</sup> <sup>27 28</sup>	
	Maint. Approp. Cost	2,557,179 2,563,937	5,124,901 5,067,960	3,865,605 2,112,380	8,389,036 10,203,573	70,569,840 70,569,625	<sup>29 40</sup> <sup>29 40</sup>	
	Minor rehab. Approp. Cost	- -	- -	- -	- -	164,689 164,689		
(Contributed Funds)	New Work Contrib. Cost	5,000 -	(567,604) (379,589)	- -	- -	7,356,596 7,356,596		
5. Sacramento River Deep Water Ship	New Work Approp. Cost	- 7,298	- 2,349	119,000 127,135	388,000 379,079	8,323,474 8,290,868	<sup>67</sup> <sup>68</sup>	
(Required Contrib. Funds)	New Work Contrib. Cost	- 2,177	- 7,574	- -	120,000 -	2,730,000 2,599,223		
(Contrib. Funds, Other)	Maint. Contrib. Cost	- -	- -	- -	- -	15,000 14,578		
15. Russian River Basin, CA, Coyote Valley Dam (Lake Mendocino) and Channell Improve- ments (Fed Funds) (Contrib. Funds, Other)	New Work Approp. Cost	- -	- -	- -	- -	14,435,869 14,435,869	<sup>54</sup> <sup>54</sup>	
	Maint. Approp. Cost	3,761,000 4,071,397	3,139,682 3,096,632	3,341,973 2,821,200	3,434,000 3,785,703	67,432,557 67,172,920	<sup>55</sup> <sup>55</sup>	
	New Work Contrib. Cost	- -	- -	- -	- -	589,911 570,774	<sup>56</sup> <sup>57</sup>	
Dry Creek (Warm Springs) Lake and Channel Improvements, CA (Federal Funds)	New Work Approp. Cost	- -	- -	- -	- -	333,108,645 333,081,773	<sup>58</sup> <sup>58</sup>	
	Maint. Approp. Cost	4,144,000 4,159,938	4,840,921 4,811,131	6,128,189 4,391,192	6,206,000 6,319,151	68,451,044 65,441,454	<sup>59</sup> <sup>59</sup>	
(Contrib. Funds, Other)	New Work Contrib. Cost	- -	- -	- -	- -	230,574 228,732	<sup>60 62</sup> <sup>61 63</sup>	
San Clemente Creek, CA	Maint. Approp. Cost	- -	- -	- -	- -	- -		
6. San Francisco Bay to Stockton, CA (John F. Baldwin and Stockton Ship Channels) (Contributed Funds)	New Work Approp. Cost	- (37,422)	(25,000) 26,302	160,000 142,368	162,028 182,693	39,134,228 39,129,700	<sup>42</sup> <sup>42</sup>	
	New Work Approp. Cost	- -	- -	53,515 -	48,053 56,048	189,884 59,985		
8. San Francisco Bay and Delta Model, CA	New Work Approp. Cost	- -	- -	- -	- -	- -		
	Maint. Approp. Cost	2,254,300 2,228,816	1,847,878 1,880,785	1,607,000 1,110,511	1,284,000 1,831,737	41,972,095 41,824,407		
9. San Francisco Bay Long Term Management Strategy (LTMS), CA	Maint. Approp. Cost	- -	192,570 192,139	192,000 (1)	946,100 1,138,518	13,281,670 13,281,656		

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 34-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003	
San Francisco Harbor, CA	New Work							
	Approp.		-	-	-	-	2,689,356	28 30 40
	Cost		-	-	-	-	2,689,356	28 30 40
	Maint.							
San Francisco Harbor and Bay, CA (Removal of Drift)	Approp.		1,892,650	879,467	1,014,000	1,438,000	46,848,796	31 40
	Cost		1,893,895	879,090	907,971	1,544,419	46,848,793	31 40
	Maint.							
	Approp.		2,039,700	1,925,699	1,895,000	2,125,000	51,413,979	40
San Leandro Marina, CA	Cost		2,351,227	1,964,551	1,755,604	2,277,832	51,410,670	40
	New Work							
	Approp.		-	-	-	-	-	
	Cost		-	-	-	-	-	
San Pablo Bay and Mare Island Strait, CA	Maint.							
	Approp.		-	1,999,774	145,325	57,521	6,862,059	32
	Cost		-	1,999,726	139,031	68,863	6,862,059	32
	New Work							
San Rafael Canal, CA	Approp.		-	-	-	-	1,369,372	28 33 40
	Cost		-	-	-	-	1,369,372	28 33 40
	Maint.							
	Approp.		67,280	1,155,139	64,174	819,830	49,395,814	34 40
San Rafael Creek, CA	Cost		67,282	1,155,139	64,174	819,830	49,395,814	34 40
	New Work							
	Approp.		(800)	-	-	-	2,179,200	
	Cost		-	-	-	-	2,179,197	
21. San Ramon Valley Recycled Water, CA (Contrib. Funds)	New Work							
	Approp.		-	-	59,500	172,000	231,500	
	Cost		-	-	54,124	166,727	220,851	
	New Work.							
Santa Cruz Harbor, CA (Federal Funds) (Contrib. Funds)	Contrib.		-	-	-	140,000	140,000	
	Cost		-	-	-	-	-	
	New Work							
	Approp.		-	-	-	-	4,126,808	52
7. Sonoma Baylands Wetlands Demo Project, CA (Contrib. Funds)	Cost		-	-	-	-	4,126,808	52
	New Work							
	Contrib.		-	-	-	-	160,000	35
	Cost		-	-	-	-	160,000	35
Suisun Bay Channel, CA Approp.	Maint.							
	Aprop.		29,419	65,041	21,500	-	9,948,177	40 53
	Cost		29,419	60,900	25,583	57	9,948,176	40 53
	New Work							
(Contrib. Funds)	Approp.		-	-	(8,000)	(35)	6,320,065	
	Cost		-	-	-	-	6,312,064	
	New Work							
	Contrib.		5,000	-	-	-	906,560	
Suisun Bay Channel, CA	Cost		-	-	-	-	796,980	
	New Work							
	Approp.		-	-	-	-	200,928	36
	Cost		-	-	-	-	200,928	36
Suisun Channel, CA	Maint.							
	Approp.		2,640,365	1,945,116	1,430,033	3,005,436	23,051,446	37
	Cost		2,653,929	1,926,198	1,368,749	3,085,021	23,050,791	37
	New Work							
	Approp.		-	-	-	-	217,677	38
	Cost		-	-	-	-	217,677	38

**SAN FRANCISCO, CA, DISTRICT**

**TABLE 34-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003
		Maint.					
		Approp.	11,231	-	-	-	3,002,462 <sup>39</sup>
		Cost	11,231	-	-	-	3,002,462 <sup>39</sup>
Upper Guadalupe River, CA		New Work					
		Approp.	1,008,000	397,000	108,700	274,000	2,070,700
		Cost	1,019,028	322,314	188,990	198,344	1,994,063
(Contrib. Funds)		New Work					
		Contrib.	1,320,000	1,320,000	360,000	-	3,385,000
		Cost	101,902	674,745	562,345	1,058,347	2,681,427

1. Includes \$641,800 for jetties, bulkheads, main Bodega Bay Channel and turning basin completed in 1943.

2. Includes \$585,000 for Preconstruction Planning (\$456,000 Construction, General funds and \$129,000 General Investigation funds).

3. Includes \$585,000 Preconstruction Planning costs (\$456,000 Construction General costs and \$129,000 General Investigation costs).

4. Includes \$982,714 for reconnaissance and condition surveys, FY 1956-2003. Excludes contributed funds of \$385,134.

5. Excludes contribution funds of \$2,000.

6. Excludes contributed funds of \$271,116 and \$2,138 surplus material from Corps military activities.

7. Excludes contributed funds of \$44,340. Includes \$1,031,900 for reconnaissance and condition surveys, FY 1956-2003.

8. Excludes \$2,000 contributed funds in lieu of royalty-free rock.

9. Includes \$2,261,371 for previous project. Excludes \$95,000 contributed funds for existing project.

10. Includes \$98,206 for previous project and \$85,603 for reconnaissance and condition surveys, FY 1956-2003.

11. Excludes \$5,337 previous project costs.

12. Excludes \$8,539 surplus material from Corps' military activities. Includes \$343,307 for reconnaissance and condition surveys, FY 1956-2003. Excludes contributed funds of \$290,653.

13. Excludes previous project costs.

14. Includes \$976,802 for reconnaissance and condition surveys, FY 1956-2003. Excludes \$496,307 contributed funds.

15. Includes \$11,985 for previous project. Excludes \$7,180 contributed funds for previous project.

16. Includes \$4,120,600 for Pre-construction Planning (\$3,540,600 for Breakwater of which \$500,000 allocated under Construction, General and \$3,040,600 under General Investigations); (\$580,000 for Channel Extension of which \$165,000 allocated under Construction, General and \$415,000 under General Investigations).

17. Includes \$4,120,596 Preconstruction cost (\$3,540,596 for Breakwater of which \$500,000 was under Construction, General and \$3,040,596 under General Investigations); (\$580,000 for Channel Extension of which \$165,000 was under Construction, General and \$415,000 under General Investigations).

18. Includes \$37,810 for previous project and \$396,725 for reconnaissance and condition surveys, FY 1956-2003. Excludes contributed funds of \$820 for previous project.

19. Excludes contributed funds of \$4,000 in lieu of providing dike disposal areas on existing project.

20. Excludes contributed funds of \$1,700.

21. Includes \$2,899,232 for previous projects. Excludes \$397,266 contributed funds on previous projects.

22. Includes \$684,028 for previous projects and \$226,556 for reconnaissance and condition surveys, FY 1956-2003. Excludes contributed funds of \$45,853.

23. Includes \$212,083 for previous project and \$4,929,999 under Section 205 and \$11,682,000 under Construction, General. Excludes contributed funds of \$15,559 for previous project.

24. Includes \$314,692 for previous project and \$774,420 for reconnaissance and condition surveys, FY 1956-2003. Excludes contributed funds of \$192,424.

25. Includes previous project costs \$31,443.

Excludes \$119,572 contributed funds for existing project.

26. Includes \$1,096,156 for reconnaissance and condition surveys, FY 1956-2003.

27. Excludes contributed funds of \$524,778. Includes \$105,000 Public Works Administration funds.

28. Excludes modification authorized October 27, 1965, under project "San Francisco Bay to Stockton, CA (John F. Baldwin and Stockton Ship Channels)."

29. Excludes \$115,536 contributed funds. Includes \$455,783 for reconnaissance and condition surveys, FY 1956-2003.

30. Includes \$1,030,399 for previous projects.

Excludes \$134,591 contributed funds for existing project. Includes \$193,000 Public Works Administration funds.

31. Includes \$475,321 for previous projects and \$813,611 for reconnaissance and condition surveys, FY 1956-2003.

32. Authorized by FC Act of 1965 (Sec. 201); Maintenance R&H Act of 1970 (Sec. 103). Includes \$424,334 for reconnaissance and condition surveys FY 1979-2003. See FY 1977 Annual Report for last full report. Excludes contributed funds of \$885,712.

33. Includes \$1,086,703 for previous projects.

34. Includes \$1,359,380 for previous projects and \$375,659 for reconnaissance and condition surveys, FY 1956-2003.

35. Excludes \$810,046 contributed funds on previous project.

36. See Sacramento District FY 1974 Annual Report for detail.

37. Project maintenance responsibility to Point Edith was transferred to San Francisco District January 1, 1974. Excludes Sacramento District's portion. Includes \$166,023 for reconnaissance and project condition surveys, FY 1976-2003.

## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003

38. Project maintenance assigned to San Francisco District from Sacramento District January 1, 1974. See Sacramento District 1972 Annual Report for full report.

39. Includes \$746,637 for reconnaissance and condition surveys, FY 1978-2003. Includes \$727,510 for previous project. Excludes \$121,386 contributed funds.

40. See FY 1981 Annual Report for last full report.

41. Excludes Contributed Funds of \$709,624.

42. See Sacramento District FY 1985 Annual Report for full report. Includes \$39,170,200 under San Francisco District's Construction, General. Excludes Sacramento District's funding of \$27,766,800.

43. Excludes \$100,000 contributed funds and \$105,000 contributed in lieu of royalty-free rock.

44. See FY 1979 Annual Report for last full report.

45. Includes \$329,070 for reconnaissance and condition surveys, FY 1970-2003.

46. Includes \$655,425 for reconnaissance and condition surveys, FY 1970-2003. Excludes \$93,500 contributed funds.

47. Excludes \$41,094 contributed funds.

48. Includes \$9,199,000 funds of which \$8,499,000 was under Construction, General and \$700,000 under General Investigations.

49. Includes \$9,199,000 costs of which \$8,499,000 was under Construction, General and \$700,000 under General Investigations.

50. See FY 1987 Annual Report for last full report.

51. Includes \$94,728 for reconnaissance and condition surveys, FY 1989-2003.

52. See FY 1988 Annual Report for last full report.

53. Includes \$245,835 for reconnaissance and condition surveys, FY 1993-2003.

54. Excludes \$5,598,000 contributed funds: \$400,000 for recreation facilities at completed projects funded under Public Works Acceleration Program; and \$1,628,411 for recreation facilities at completed projects funded under Code 711 at Coyote Valley Dam, Lake Mendocino.

55. Includes \$94,459 special recreation use fees and costs (FY 1982-1983), but excludes prior special recreation fees and cost for Coyote Valley Dam, Lake Mendocino.

56. Includes \$251,911 contributed funds, other from City of Ukiah for Coyote Valley Dam, Lake Mendocino, hydropower studies; and \$338,000 from California

Department of Boating and Waterways for launching facility at Lake Mendocino.

57. Includes \$250,117 contributed funds, other costs for Coyote Valley Dam, Lake Mendocino, hydropower studies; and \$320,657 for California Department of Boating and Waterways for launching facility at Lake Mendocino.

58. Includes \$253,421,793 previous San Francisco construction funds and costs through August 1983 for Dry Creek, Warm Springs Dam.

59. Includes \$964,114 previous San Francisco maintenance funds and costs through April 1982 for Dry Creek, Warm Springs Dam.

60. Includes \$208,074 contributed funds, other, from Sonoma County for Dry Creek, Warm Springs, hydropower studies; and \$22,500 from City of Ukiah for hatchery pump design at Lake Mendocino.

61. Includes \$208,074 contributed funds, other, costs for Dry Creek, Warm Springs hydropower studies; and \$20,658 costs for hatchery pump design.

62. Includes \$7,303,725 San Francisco District construction funds and costs for Corte Madera Creek.

63. \$8,695 contributed funds transferred to Sacramento District in FY 1983. Includes \$97,400 San Francisco District required contributed funds and costs.

64. Contributed funds, other, and costs, from Marin County including \$536,921 for miscellaneous bridge and road relocations and \$267,840 for additional expenses for disposal sites at Corte Madera Creek.

65. See FY 1998 Annual Report for last full report.

66. Includes \$212,083 for previous project and \$4,929,823 under Section 205 and \$11,657,779 under Construction, General.

67. Includes unobligated carryover for continuation of planning and engineering (CP&E) funds as of September 30, 1985 (\$33,474) for Sacramento River Deep Water Ship Channel to be included in project cost (for cost sharing) per TWX of September 9, 1985. Includes Sacramento District's FY 02 approp of \$2,000 and San Francisco District's FY 02 approp of 117,000.

68. Includes Sacramento District's FY 02 cost of \$27,983 and San Francisco District's FY 02 cost of 99,152.

# SAN FRANCISCO, CA, DISTRICT

**TABLE 34-B**

## AUTHORIZING LEGISLATION

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
1.		<b>CRESCENT CITY HARBOR, CA</b>	
	Jul. 18, 1918	A breakwater bearing S. 26-1/4 E. from Battery Point to Fauntleroy Rock and breakwater from the shore to Whaler Island.	H. Doc. 434, 64th Cong., 1st sess.
	Sep. 22, 1922	Modified condition of local cooperation which required that local interests construct a railroad from Grants Pass, Oregon to Crescent City so that a State Highway to Grants Pass would be an acceptable alternate.	Rivers & Harbors Committee Doc. 4, 67th Congress, 2nd sess.
	Jan. 21, 1927	Extension of the breakwater to a length of 3,000 feet and a reduced cash contribution required of local interests.	H. Doc. 595, 69th Cong., 2nd sess.
	Aug. 30, 1935	Maintaining by dredging of an outer harbor basin, 1,800 feet long, 1,400 feet wide and 20 feet deep, except in rock.	Rivers & Harbors Committee Doc. 40, 74th Cong.
	Aug. 26, 1937	Construction of a sand barrier from Whaler Island to the mainland and for maintenance dredging in the vicinity of the seaward end of the sand barrier.	Senate Committee Print, 75th Cong., 1st sess.
	Mar. 2, 1945	Extension of existing breakwater 2,700 feet to Round Rock (modified by Chief of Engineers, 1952).	H. Doc. 688, 76th Cong., 3rd sess.
	Mar. 2, 1945	Construction of inner breakwater and removal of pinnacle rock and other material from the harbor to a depth of 12 feet and a harbor basin with a project depth of 10 feet.	Report on file in office, Chief of Engineers.
	Oct. 27, 1965	Extension of inner breakwater and dredging of T-shaped harbor basin to depth of 20 feet.	H. Doc. 264, 89th Cong., 1st sess.
2.		<b>HUMBOLDT HARBOR, CA</b>	
	Mar. 3, 1881	Channel 10 feet deep by 350 feet wide to be dredged along Eureka waterfront, thence 8 feet deep by 200 feet wide west to natural channel; dredging Mad River Shoal to 8 feet deep.	H. Doc. 59 Cong., 3rd sess.
	Jul. 5, 1884	Construct South Jetty and continue channel improvements.	River & Harbor Approp Act of 1884
	Aug. 5, 1886	\$75,000 continued improvement of Harbor with provision for title to 12 acres of land to be conveyed to the U.S.	River & Harbor Approp Act of 1886
	Jul. 3, 1892	Map and cost estimates for continuing Harbor improvements with provision for two parallel jetties.	Chief of Engrs Annual Report (p.3120) Annual River & Harbor, Approp Acts 1892-1899
	Mar. 3, 1899	Continuing Harbor improvements with provision for two parallel jetties.	H. Doc. 528, 55th Cong., 2nd sess.
	Jun. 25, 1910	Rebuilding the jetties and channel improvements to Arcata and Hookton.	H. Doc. 950, 60th Cong., 1st sess., H. Doc. 204, 61st Cong., 2nd sess., H. Doc. 326, 61st Cong., 2nd sess.
	Jul. 3, 1930	Eureka Channel 20 feet deep and 300 feet wide; Samoa Channel 20 feet deep and 250 feet wide; Arcata Channel 18 feet deep and 150 feet wide; Fields Landing Channel 20 feet deep and 250 feet wide.	H. Doc. 755, 69th Cong., 2nd sess.
	Aug. 30, 1935	Entrance Channel 30 feet deep and 500 feet wide.	Rivers and Harbors Committee Doc. 14 74th Cong., 1st sess
	Aug. 26, 1937	Eureka Channel 26 feet deep and 400 feet wide; Samoa Channel 26 feet deep and 300 feet wide;	Rivers & Harbors Committee, Doc.

**TABLE 34-B (Cont'd)**

**AUTHORIZING LEGISLATION**

See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
		Fields Landing Channel 26 feet deep and 300 feet wide; Turning Basin (off Fields Landing wharf) channel 26 feet deep, 600 feet wide and 800 feet long.	11, 75th Cong., 1st sess.
	Jul. 16, 1952	Bar & Entrance Channel 40 feet deep, tapered from 1,600 feet to 500 feet wide; North Bay Channel 30 feet deep and 400 feet wide; Eureka Channel 30 feet deep to mile 5.0; Samoa Channel 30 feet deep.	Rivers & Harbors Committee, Doc. 143, 82nd Cong., 1st sess.
	August 1968	North Bay Channel 35 feet deep; Samoa Channel 35 feet deep; widen turns at mile 0.75 and 2.6; provide a 1,200 by 1,200 foot anchorage in North Bay.	H. Doc. 330, 90th Cong., 2nd sess.
	Oct. 12, 1996	Bar and Entrance Channel 48 feet deep; North Bay Channel, Samoa Channel and Samoa Turning Basin 38 feet deep; widen the north side of the Entrance Channel an additional 200 to 275 feet; relocate the southern edge of the Entrance Channel away from the South Jetty and to the north by 100 feet; and widen and realign the entrance to the Samoa Turning Basin.	Section 10, Public Law 104-303, 1996 WRDA
<b>3. OAKLAND HARBOR, CA</b>			
	June 23, 1874	Jetties.	Annual Report, Part II, 1874, P. 378.
	June 25, 1910	North channel in Brooklyn Basin, 25 feet deep, and tidal canal to 18 feet.	H. Doc. 647, 61st Cong., 2d sess.
	Sep. 22, 1922	Channel across shoal southeast of Yerba Buena Island and thence to Webster St.; South channel in Brooklyn Basin; Turning Basin at east end of Brooklyn Basin; and channel in Tidal Canal from Brooklyn Basin to Park St., 30 feet deep.	H. Doc. 144, 67th Cong., 2d sess.
	Jan. 21, 1927 <sup>2</sup>	Channel from Webster St. to Brooklyn Basin, maintain area to within 75 feet of pierhead line south of channel from Harrison St. to Harbor Line Point 119 in Brooklyn Basin; dredge a triangular strip about 2,700 feet long and maximum width of 300 feet at western end of Brooklyn Basin, 30 feet deep.	H. Doc. 407, 69th Cong., 1st sess. <sup>1</sup>
	Apr. 28, 1928	Local cooperation requirements modified to provide alteration or replacement of bridges by local interests shall apply only to that feature of project covering deepening tidal canal to 25 feet. Drawbridges across Tidal Canal were required by 1882 Decree of Court in condemnation proceedings whereby title was obtained to right-of-way for tidal canal.	Public Res. 28, 70th Cong.
	July 3, 1930	Entrance channel to outer harbor, 800 to 600 feet wide.	Rivers and Harbors Committee Doc. 43, 71st Cong., 2nd sess.
	Mar. 2, 1945	Eliminated requirement that local interests contribute 10 cents per cubic yard toward deepening tidal canal.	Doc. 466, 77d Cong., 1st sess.
	Mar. 2, 1945	Maintenance of 35-foot depth in channel to outer harbor and in outer harbor channel and turning basin.	Report on File in Office, Chief of Engineers
	Oct. 23, 1962 <sup>3</sup>	Deepen inner harbor 35-foot channels and lower 1,300 feet of north channel in Brooklyn Basin to 35 feet.	H. Doc. 353, 87th Cong., 2d sess. <sup>1</sup>



**SAN FRANCISCO, CA, DISTRICT**

**TABLE 34-B (Cont'd)**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
	Nov. 17, 1986	Deepen Inner and Outer Harbor channels to 42 feet. Widen entrance channel to 1,000 feet; relocate Outer Harbor turning basin 3,000 feet westward and widen turning basin to 1800 feet. Construct 1,200 foot turning basin in Inner Harbor.	Public Law 99-662, 1986 WRDA
	Aug. 17, 1999	Deepen Inner and Outer Harbor channels to 50 feet. Widen Outer Harbor turning basin diameter to 1650 feet and widen Inner Harbor turning basin diameter to 1500 feet.	Public Law 106-53, 106 <sup>th</sup> Cong., 1999 WRDA
<b>4.</b>	<b>RICHMOND HARBOR, CA</b>		
	Aug. 8, 1917	Channel 24 feet deep and 600 feet wide from San Francisco Bay to Ellis Slough (Santa Fe Channel); a turning basin at Point Potrero; a training wall.	H. Doc. 515, 63rd Cong., 2d sess.
	July 3, 1930	A 30-foot channel with lessened widths; a turning basin at head of navigation.	Rivers and Harbors Committee Doc. 16, 70th Cong., 1st sess.
	Aug. 30, 1935 <sup>4</sup>	Increase project widths in inner harbor, maintenance of Santa Fe channel to 30 feet; approach areas in outer harbor to 32 feet.	Rivers and Harbors Committee Doc. 7, 73rd Cong., 1st sess., and 10, 74th Cong., 1st sess.
	June 20, 1938	Widen channel at Point Potrero and north thereof; enlarge and maintain to 30-foot depth turning basin at Terminal No. 1.	H. Doc. 598, 75th Cong., 3rd. sess.
	Mar. 2, 1945	Channel 20 feet deep, 150 feet wide, in San Pablo Bay north of Point San Pablo.	H. Doc. 715, 76th Cong., 3rd. sess.
	Sep. 3, 1954	Channel 35 feet deep and 600 feet wide adjacent to Southampton Shoal; enlarge and deepen to 35 feet approach area to Richmond Long Wharf; widen and deepen inner harbor and entrance channels; deepen turning basin at Point Richmond and southerly 2,000 feet of Santa Fe Channel. Eliminate restriction that widening north of Point Potrero will not be undertaken until local interests furnish assurances industries will avail themselves of improved navigation facilities and reclamation of Reservation Point.	H. Doc. 395, 83rd Cong., 2nd sess. <sup>1</sup>
	Oct. 27, 1965	West Richmond channel 45 feet deep, 600 feet wide; enlarge and deepen to 45 feet maneuvering area at Richmond Long Wharf (Sacramento Dist. "San Francisco Bay to Stockton, Calif. (John F. Baldwin and Stockton Ship Channels)").	H. Doc. 208, 89th Cong., 1st sess. <sup>1</sup>
	Nov. 17, 1986	Deepen channel to 38 feet between Richmond Long Wharf and Santa Fe Channel. Construct 1,200 feet turning basin.	Public Law 99-662, 1986 WRDA
<b>5.</b>	<b>SACRAMENTO RIVER, CA</b>		
	Mar 3, 1899	A depth of 7 feet below Sacramento works.	H. Doc. 186, 55 <sup>th</sup> Cong., 2d sess., and 48, 55th Cong., 3d sess. (Annual Report 1898, p. 2844 and 1899, p. 3171).

**TABLE 34-B (Cont'd)**

**AUTHORIZING LEGISLATION**

<b>See Section in Text</b>	<b>Date of Authorizing Act</b>	<b>Project and Work Authorized</b>	<b>Documents</b>
	Jan 21, 1927	The 10-foot channel up to Sacramento	H. Doc. 123, 69th cong., 1st sess.
	July 24, 1946	Modified existing navigation project for Sacramento River, CA, to provide for construction of a ship channel 30 feet deep and 200 to 300 feet wide from deep water in Suisun Bay to Washington Lake, including such works as may be necessary to compensate for or alleviate any detrimental salinity conditions resulting from ship channel; a triangular basin of equal depth, 2,400 by 2,000 by 3,400 feet at Washington Lake; and connecting channel 13 feet deep and 120 feet wide, with lock and drawbridge, thence to Sacramento River.	S. Doc. 142, 79th Cong., 2d sess.
	Nov 17, 1987	Deauthorization of shallow-draft channel, Colusa to Red Bluff, feature of project for navigation, Sacramento River, California.	Sec. 1002, 1986 WRDA
		Reiteration of Public Law 99-08 (Aug 15, 1985), which authorized construction of 35 ft channel	Sec 202(a), 1986 WRDA
	Dec 11, 2000	Reauthorization of Sacramento River, Major and Minor Tributaries and Chico Landing to Red Bluff, CA	Sec 305 (a) (1-2), WRDA 2000
6.		<b>SAN FRANCISCO BAY TO STOCKTON, CA (JOHN F. BALDWIN AND STOCKTON SHIP CHANNELS)</b>	
	Oct. 27, 1965	i)Deepen the channel across San Francisco Bar to 55 feet without widening; ii) construct a new channel in upper S.F. Bay leading through the west navigation opening of the Richmond-San Rafael Bridge to 45' depth and 600' width and deepen the maneuvering area adjacent to the Richmond Long Wharf to 45'; (iii) Deepen the Pinole Shoal Channel in San Pablo Bay within its existing 600' width and the maneuvering Area at Oleum to 45'; (iv) deepen the Suisun Bay Channel to 45' as far upstream as Chipps Island and to 35' beyond, with widening to 600' upstream to Middle Point and 400' beyond, and widening and deepening to comparable depths of maneuvering areas at refinery terminals; and (v) deepen the Stockton Deep Water Channel to 35' and realign the channel through False River and across the northern portions of Fanks Tract and Mandeville Island, all to its existing widths of 400' in open water and 225' through levee-confined reaches.	H. Doc. 208, 89th Cong., 1 <sup>st</sup> sess.
7.		<b>SONOMA BAYLANDS WETLANDS DEMONSTRATION PROJECT, CA</b>	
	Oct. 5, 1992	Restoration of tidal wetland on a 348-acre site using dredged material and construction of a replacement levee around the landward periphery of the site.	Section 106, Public Law 102-580, 1992 WRDA

**TABLE 34-B (Cont'd)**

**AUTHORIZING LEGISLATION**

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## SAN FRANCISCO, CA, DISTRICT

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See Section in Text	Date of Authorizing Act	Project and Work Authorized	Documents
13.		<b>CORTE MADERA CREEK, CA</b>	
	Oct. 23, 1962	Levees and channel improvements, lower 11 miles of Corte Madera Creek and tributaries, as modified by Chief of Engineers.	H. Doc. 545, 87th Cong., 2nd sess.
	Nov. 7, 1966	Local cooperation requirements modified to provide 1.5 percent cash contribution toward cost of Ross Valley unit.	Sec. 204, 1966 Flood Control Act
	Nov. 17, 1986	Modify existing project to direct construction of Unit 4 from Lagunitas Road Bridge to Sir Francis Drake Boulevard, and to include construction of floodproofing measures in vicinity of Lagunitas Road Bridge to insure proper functioning of completed portions of authorized project. Further modify project to eliminate any channel modifications upstream of Sir Francis Drake Boulevard.	Sec. 823, 1986 WRDA
14.		<b>PETALUMA RIVER, CA</b>	
	Jun. 30, 1948	Floodwalls and channel improvements along 3,600 feet of the Petaluma River and tributaries.	Flood Control Act of 1948, Public Law 80-858, 80th Cong., 2nd sess.
	Jan. 24, 2000	Provide a 100-year level of flood protection to the city of Petaluma.	Public Law 106-541, 106 <sup>th</sup> Cong., 2d sess., 2000 WRDA
15.		<b>RUSSIAN RIVER BASIN, CA</b>	
	May 17, 1950	Coyote Valley Dam (Lake Mendocino): Channel improvements on lower 98 miles of Russian River and lower reaches of tributaries.	H. Doc. 585, 81st Cong., 2d sess.
	Feb. 10, 1956	Increased appropriation authorization for initial stage of project development.	PL 404, 84th Cong., 2d sess.
	Oct. 23, 1962	Dry Creek (Warm Springs) Lake; Channel Improvements on Dry Creek below dam.	H. Doc. 547, 87th Cong., 2d sess.
	Mar. 7, 1974	Dry Creek (Warm Springs) Lake and channel; compensate for fish losses on the Russian River which may be attributed to the operation of the Coyote Dam component of the project through measures such as possible expansion of the capacity of the fish hatchery at the Warm Springs Dam component of the project.	Sec. 95, 1974 WRDA
20.		<b>HAMILTON AIRFIELD WETLANDS RESTORATION, CA</b>	
	Aug 17, 1999	Implement an ecosystem and wetland restoration project at the Hamilton Army Airfield and adjacent properties and lower reaches of tributaries.	Public Law 106-53, 106 <sup>th</sup> Cong., 1999 WRDA
21.		<b>SAN RAMON VALLEY RECYCLED WATER, CA</b>	
	Oct 31, 1992	Provide assistance to non-Federal interests for carrying out water-related environmental infrastructure and resource protection and development projects described in subsection (c), including wastewater treatment and related facilities and water supply, storage, treatment, and distribution facilities.	Public Law 102-580, Appendix A, Sec. 219 WRDA
	Aug 17, 1999	Provide assistance for construction for recycled water.	Public Law 106-53, 106 <sup>th</sup> Cong., 1999 WRDA

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## **REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

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1. Contains latest published map.
2. Included deepening of tidal canal above Park Street Bridge to 25 feet, which was deauthorized November 6, 1977.
3. Reconstruction of Fruitvale Avenue

Highway Bridge (S. Doc. 75, 87th Cong., 2d sess.) which was deauthorized November 6, 1977.

4. Included in part in Public Works Administration Program, September 6, 1933.

**SAN FRANCISCO, CA, DISTRICT**

**TABLE 34-C OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last Full Report See Annual Report For	Cost to Sep. 30 2003	
			Construction	Operation and Maintenance
Berkeley Harbor, CA <sup>1</sup>	Completed	1966	\$ 155,550 <sup>2</sup>	\$128,842 <sup>9</sup>
Berkeley Marina, CA <sup>1</sup>	Completed	1979	505,201 <sup>3</sup>	-
Monterey Harbor, CA	Completed	1971	1,108,182 <sup>4</sup>	2,056,442 <sup>5</sup>
San Francisco Harbor (Islais Creek), CA <sup>1</sup>	Completed	1976	848,227 <sup>7</sup>	179,721 <sup>11</sup>
San Francisco Marina (Gas House Cove), CA	Completed	1974	180,472 <sup>6</sup>	104,779 <sup>10</sup>
San Leandro Marina (Breakwater), CA <sup>1</sup>	Completed	1976	210,390 <sup>8</sup>	341,327 <sup>12</sup>
Sausalito Canal, Richardson Bay, CA	Inactive	1963	103,095	153,415 <sup>13</sup>

1. Authorized by Chief of Engineers (Sec. 107, Public Law 86-645).

2. Excludes \$155,551 contributed funds.

3. Excludes \$378,989 contributed funds.

4. Includes \$207,800 Public Works Administration funds and breakwater modifications (1960 Act) placed inactive 1974. The barrier groin and sandtrap feature of the project was deauthorized November 17, 1986, by WRDA of 1986.

5. Includes \$2,056,442 for reconnaissance and condition survey for FY 1956-2003.

6. Includes preauthorization costs \$26,855 and excludes contributed funds \$153,618.

7. Includes \$94,550 preauthorization costs.

8. Includes \$72,000 preauthorization costs and excludes contributed funds \$138,189.

9. Includes \$128,842 for jetty condition surveys for FY 1987-2003.

10. Includes \$104,779 for reconnaissance and condition survey for FY 1990-2003.

11. Includes \$179,721 for reconnaissance and condition survey for FY 1994-2003.

12. Includes \$341,327 for reconnaissance and condition survey through FY 2003.

13. Includes \$83,250 for reconnaissance and condition survey through FY 2003.

**TABLE 34-G DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Humboldt Bay (Buhne Point), CA	1958	Jan. 1, 1990	\$ 2,000	-
Lower San Francisco Bay, CA	1935	Jan. 1, 1990	-	-
Knights Valley Lake, R.R. Basin, CA	1974	Aug. 5, 1977	-	-
Oakland Harbor, CA (Deepen Tidal Canal)	1981	Nov. 6, 1977	-	-
Oakland Harbor, CA (Fruitvale Avenue Bridge)	1981	Nov. 6, 1977	-	-
San Lorenzo Creek, CA (Upper Portion)	1962	Nov. 6, 1977	-	-
San Pablo Bay and Mare Island Strait, CA (Approaches to Vallejo and South Vallejo)	1982	Nov. 6, 1977	-	-
Santa Cruz County, CA	1966	Jan. 1, 1990	245,639	-
Santa Cruz Harbor (Sealing & East Jetty)	1990	Nov 29, 1995	-	-

**TABLE 34-H**

**INSPECTION OF COMPLETED  
FLOOD CONTROL PROJECTS**

(See Section 16 of Text)

<b>Location</b>	<b>Dates of Inspection</b>
Alameda Creek	Apr 2003
Corte Madera Creek	Aug 2003
Coyote Creek, Marin County	Aug 2003
Coyote Creek, Santa Clara County	Jul 2003
Dry Creek	Jun 2003
East Weaver Creek	Jul 2003
Eel River at Sandy Prairie	Aug 2003
Guadalupe River	Aug 2003
Klamath River	Jul 2003
Mad River at Blue Lake	Jul 2003
Pajaro River, Monterey County	Jun 2003
Pajaro River, Santa Cruz County	Jun 2003
Pinole Creek	Aug 2003
Redwood Creek	Jul 2003
Rheem Creek	Aug 2003
Rodeo Creek	Aug 2003
Russian River, Mendocino County	Jun 2003
Russian River, Sonoma County	Jun 2003
San Leandro	Apr 2003
San Lorenzo Creek	Apr 2003
San Lorenzo River	Jun 2003
San Pablo Creek	Aug 2003
Uvas Creek	Jul 2003
Wildcat Creek	Sep 2003

be paid over a period not to exceed 50 years after use of storage is initiated and inclusive of lands and damages.

# SACRAMENTO, CA, DISTRICT

This district comprises basins of Suisun Bay and San Joaquin and Sacramento Rivers in California; Goose Lake in Oregon; basins of the Great Salt Lake and Sevier Lake in Utah; an intervening portion of Great Basin in northern Nevada, northern California, and

southeastern Idaho; and the upper Colorado River basin, which is in southwestern Wyoming, eastern Utah, northeastern Arizona and western Colorado, west of the Continental Divide.

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## SACRAMENTO, CA, DISTRICT

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### Navigation

#### 1. SACRAMENTO RIVER, CA

**Location.** Rises in Trinity Mountains in north-central California, flows generally southerly about 374 miles and empties into Suisun Bay, an arm of San Francisco Bay, at Collinsville, CA. (See Geological Survey topographic map of Sacramento Valley, CA.)

**Previous projects.** For details see page 1985 of Annual Report for 1915 and page 1708 of Annual Report for 1938.

**Existing project.** For description of Sacramento Deep Water Ship Channel, see Annual Report for 1969. Total first cost for completed portion was \$43,932,558 (\$39,560,558 Federal (Corps), \$300,000 (Coast Guard), and \$4,072,000 non-Federal for lands and damages, including relocations) and excludes local Interests cost \$10,741,000 (June 1963) for 30-foot deep connecting canal basic terminal facilities required under terms of project authorization. Project also provided for a shallow-draft channel 10 feet deep

at mean lower low water 150 to 200 feet bottom width, from Suisun Bay to Sacramento, CA, 60 miles; a depth of 6 feet at low water between Sacramento and Colusa, 85 miles; a depth of 5 feet at low water between Colusa and Chico Landing, 50 miles; and such depths as practicable between Chico Landing and Red Bluff, 53 miles, a total distance of 248 miles. However, shallow-draft channel feature Colusa to Red Bluff (including Colusa to Chico Landing, 50 miles and Chico Landing to Red Bluff, 53 miles) was deauthorized by 1986 Water Resources Development Act on November 17, 1986 (Public Law 99-662). (See table 35-H on tidal and flood conditions prevailing.)

**Local cooperation.** Fully complied with for deep water ship channel project. None required on shallow-draft feature.

**Terminal facilities.** Piers, wharves, and docks at Port of Sacramento for shallow-draft navigation are open-pile structures with timber decks, some of which are designed to meet extreme high waters of flood stages. All main wharves at Sacramento have rail connections. Three of above facilities are owned by

city of Sacramento and remainder by private interests; all are privately operated. For full description see "Port and Terminal Facilities at the Ports of Sacramento, Stockton, Pittsburg and Antioch, Calif., 1986." Deep water terminal facilities comprise wharves and piers, administration and storage buildings, and belt railroad facilities. Majority of these facilities are owned and operated by Sacramento-Yolo Port District; remainder are privately owned and operated. Facilities are considered adequate for existing commerce.

**Operations during fiscal year.** New work, Deep Water Ship Channel: None. Maintenance: Shallow Draft Channel: Maintenance and operation activities continued in Sacramento River, Sacramento upstream to Colusa. Deep Water Ship Channel: Maintenance and operation activities continued.

**Historical summary.** Construction of 7-foot shallow-draft channel below Sacramento was initiated in September 1899 and completed in 1904. Modified 10-foot shallow-draft channel up to Sacramento was initiated in FY 1928 and completed in 1931. Shallow-draft channel above Sacramento was begun in April 1946 but new work was discontinued when about 48 percent complete. In February 1974, remaining work for shallow-draft portion of project, provision of a 5-foot depth between Colusa and Chico Landing (50 miles), was reclassified as "deferred." Channel is navigable all year; however, there is no regular navigation above Colusa, 145 miles above river mouth. On November 17, 1986, remaining shallow-draft feature, Colusa to Red Bluff (including Colusa to Chico Landing, 50 miles and Chico Landing to Red Bluff, 53 miles) was deauthorized by 1986 Water Resources Development Act (Public Law 99-662). Construction of 30-foot deep water ship channel was initiated in July 1949; improvement dredging by continuing contracts resulted in provision of an operational facility for oceangoing vessels during June 1963. Bascule bridge was completed in April 1960, barge lock in August 1961, barge canal in November 1961, and entire deep water ship channel in June 1970.

## 2. SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, CA

**Location.** The project is located on the Sacramento River, between Collinsville and the Port of Sacramento, a distance of approximately 43 miles, in

the counties of Sacramento, Contra Costa, Solano and Yolo, CA.

**Existing project.** Existing waterways are inadequate to efficiently accommodate vessels currently using the channel. Because of the depth restriction, only 20% of the world's fleet can currently load to full design depth. Once deepened, the Port of Sacramento will be able to accommodate 70% of the world's fleet at full design draft. The project plan is to deepen the existing 30 feet Sacramento River Deep Water Ship Channel from N.Y. Slough to the Port of Sacramento, a distance of about 43 miles, to 35 feet, and widen the channel as necessary. The project provides for establishment of wetland habitat and upland habitat to mitigate for such losses. Recreation was also authorized although no local sponsor has been identified. Current project estimate is \$50,000,000 and is comprised of Federal cost (Corps) of \$24,900,000; Federal cost (Coast Guard-for navigation aids) of \$300,000 and non-Federal cost of \$24,800,000.

**Local cooperation.** A Local Cooperation Agreement (LCA) was signed with the local sponsor, the Port of Sacramento, in June 1986. A modification to the LCA, necessitated by the Water Resources Development Act of 1986, was executed in December 1988. The local sponsor will provide lands, easements, rights of way and dredged material disposal areas; modify or relocate buildings, utilities, roads, bridges (except railroad bridges) and other facilities, where necessary in the construction of the project; and pay 25 percent of the costs allocated to deep draft navigation during construction.

**Terminal facilities.** All main wharves at Sacramento have rail connections. Three facilities are owned by the City of Sacramento and the rest are privately owned; all are privately operated. For full description, see "Port and Terminal Facilities at the Ports of Sacramento, Stockton, Pittsburg and Antioch, Calif., 1986". Deepwater terminal facilities are comprised of wharves, piers, administration and storage buildings and belt railroad facilities. The majority of these facilities are owned and operated by the Sacramento-Yolo Port District and the rest are privately owned and operated. The facilities are considered adequate for existing commerce.

**Historical summary.** Funds to initiate pre-construction planning were appropriated in fiscal year

1982. Project construction was authorized by the Supplemental Appropriations Act of 1985 and modified by the WRDA 1986. The General Design Memorandum was approved and the Record of Decision was signed in May 1987. The modified LCA was executed in December 1988. The first construction contract for deepening was awarded in February 1989 and completed in July 1990. A second construction contract was awarded in September 1990 and completed in August 1991. Construction from River Mile 43 to River Mile 35 has been completed. In fiscal year 1996, the sponsor requested indefinite suspension of the project due to their inability to meet their cost share requirements. Based on Congressional direction in Conference Report 105-749, dated September 25, 1998, the Corps has developed a study plan outlining the scope, schedule and costs to prepare a Engineering Documentation Report (EDR). This preliminary assessment has been submitted to the sponsor for their review and a determination will be made as to proceeding with the EDR. This plan, together with the sponsor's financing plan, will serve as the basis for requesting additional Federal funds for costs associated with the EDR. Section 305 of WRDA 2000 "authorized credit toward the non-Federal share of the cost of the project the dredged material from the project that is purchased by public agencies or nonprofit entities..."

**Operations during fiscal year.** Completed the study plan and continued project coordination. Dredging was initiated and completed at a contract cost of \$1,277,000.

The sponsor requested San Francisco District take the lead in the LRR based on SPN's navigation expertise. South Pacific Division memo dated 12 Aug 2002 directed San Francisco District to take the study's regional management responsibilities.

### 3. SAN FRANCISCO BAY TO STOCKTON, CA (JOHN F. BALDWIN AND STOCKTON SHIP CHANNELS)

Reported on by the San Francisco District. Refer to Report of the Secretary of the Army on Civil Works Activities for FY 1995.

### 4. SAN JOAQUIN RIVER, CA

**Location.** Rises in east central California and flows westerly and northwesterly about 340 miles to its confluence with Sacramento River at head of Suisun Bay, 48 miles northeast of San Francisco. Deep water channel in San Joaquin River extends 41 miles from its mouth in Suisun Bay at Pittsburg to city of Stockton. Waterborne access to city provided by Stockton Channel, an artificial cut extending from river about 2 miles into city. (See Coast and Geodetic Survey Sheet 5527.)

**Existing project.** For description of completed improvement, modifications, and authorizing acts, see Annual Report for 1967. (See table 35-I for total cost of new work for project completed in May 1960.)

Projects units (1950 modification) reclassified and excluded from project cost are set forth in table 35-J.

Modification of existing project is included as one unit of San Francisco Bay to Stockton, CA, (John F. Baldwin and Stockton Ship Channels) project, authorized by 1965 River and Harbor Act (H. Doc. 209, 89th Cong., 1st sess.); this modification is reported in detail under Sacramento District, improvement No. 3 and San Francisco District, Improvement No. 3.

**Local cooperation.** Fully complied with for completed portion of project; for details of required cash contributions on completed, inactive and deferred portions of project see Existing project paragraph, Annual Report for 1967.

**Terminal facilities.** For description of harbor facilities at Port of Stockton, CA, see Port Series 32, "The Ports of Sacramento, Stockton, Pittsburgh and Antioch, Calif.," revised 1986. Downstream from Stockton, traffic is accommodated by bank landings and sheds except at Antioch and near Pittsburgh, where there are wharves for shallow- and deep-draft vessels. Terminal transfer facilities at public ocean terminal of Port of Stockton are adequate for present and immediate future.

**Operations and results during fiscal year.** Maintenance: Condition studies and miscellaneous inspections and reports were accomplished by hired labor. Dredging was initiated and completed at contract cost of \$1,322,000. (Repair or restoration of wavewash protection is required by legislation authorized by Improvement No. 3.)

**Historical Summary.** Active portion of existing project was completed in May 1960. Construction of project was initiated in December 1877.

## **Flood Control**

### **5. AMERICAN RIVER WATERSHED, (Common Features)**

**Location.** The project is located in Placer, El Dorado, and Sacramento Counties on the North, Middle and South Forks of the American River and along the lower American River and Sacramento Rivers.

**Existing Project.** Recent evaluations indicate that the level of flood protection along much of the American River and in the Natomas area is less than the 100-year level. The project consists of levee improvements including a slurry wall along 21 miles of the lower American River, levee modifications along 12 miles of the Sacramento River, telemetered gages above Folsom Dam, improving the flood warning system for the lower American River, installing a closure structure at Mayhew Drain, 3 miles of levee modifications along lower American River, and levee modifications along 10 miles of the Natomas Cross Canal. Cost estimate (October 2000) is \$96,000,000 (includes an allowance for estimated inflation through the construction period), of which \$72,200,000 is Federal cost and \$23,800,000 is non-Federal cost (which includes \$17,670,000 cash contribution).

**Local cooperation.** In accordance with cost sharing requirements specified in Water Resources Development Act (WRDA) of 1986, local interests are required to provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, and pay 18 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities. The non-Federal sponsor has also agreed to make all required

payments concurrently with project construction. Project cooperation agreement (PCA) was signed July 13, 1998.

**Operations and results during fiscal year.** Construction contract for levee improvements along the right bank of the lower American River continued with a fiscal year cost of \$8,120,000. Construction contracts were awarded for levee improvements along the left bank of the lower American River with a fiscal year cost of \$4,436,000. Remaining fiscal year cost of \$4,365,000 was for associated engineering and design and construction management costs.

**Historical summary.** The Defense Appropriations Act for FY 1993 authorized construction of the Natomas feature of the project, which includes levee improvements around the perimeter of the Natomas basin, a 300-acre detention area in North Natomas, and recreation trails. The local sponsor has already constructed much of the project. Federal Construction General funds were appropriated in FY 1998 to initiate reimbursement to the sponsor for the Federal share of the project. Initial reimbursement of \$15 million was made to the sponsor in September 1999. The Defense Appropriations Act for Fiscal Year 1993 also directed the Corps to reevaluate other features recommended in the Feasibility Report and a Supplemental Information Report (SIR) was completed in March 1996. The Chief of Engineer's Report recommended implementation of elements common to the final candidate plans presented in the SIR. These "common elements" were authorized for construction in WRDA 96 and Federal Construction General funds were appropriated in FY 1998 for initiation of construction. Sec. 366 of WRDA 99 authorized additional levee improvements as part of the overall project.

### **6. AMERICAN RIVER WATERSHED, (Folsom Dam Modifications)**

**Location.** Folsom Dam and Reservoir, located on the American River, is about 29 miles upstream of the City of Sacramento, California. The American River watershed drains about 2,100 square miles northeast of Sacramento and includes portions of Placer, El Dorado, and Sacramento Counties. Runoff from this basin flows through Folsom Reservoir and passes through Sacramento to the confluence with the Sacramento River.

**Existing Project.** The existing Folsom Dam has an objective release of 115,000 cubic feet per second (cfs) during flood operations. However, the existing eight outlets limit releases to about 36,000 cfs until approximately one half of the reservoir's flood control space is filled. At this level, the pool elevation is sufficient for spillways to release the full 115,000 cfs. The project will modify the existing outlets and constructing additional outlets to allow releases of roughly 115,000 cfs much earlier. The project features consist of: enlarging the eight existing river outlets; constructing two new river outlets, constructing a stilling basin downstream from the emergency spillway; and modifying the auxiliary spillway gates and dikes at Folsom Dam to normalize the use of surcharge storage. Following authorization of the Folsom Dam Mini-Raise project, design of the Surcharge Storage project features has been deferred. With the increased release capacity, it will be possible to make significant release in advance of a flood event. This "advance release" would allow the reservoir storage level to be reduced, thus creating additional space to store incoming flood volume. Cost estimate is \$212,900,000 of which \$138,385,000 (65%) is Federal cost and \$74,515,000 (35%) is non-Federal cost.

**Local Cooperation.** The California State Reclamation Board and the Sacramento Area Flood Control Agency (SAFCA) are the non-Federal sponsors. The Project Cooperation Agreement (PCA) is scheduled for execution in March 2004. The non-Federal sponsor is financially capable and willing to contribute the non-Federal share. State of California legislation (AB 1147), enacted 31 August 2000, authorizes the State Reclamation Board to participate in the project to modify Folsom Dam adopted and authorized by Congress in Section 101 (a) (6) of WRDA 99.

**Historical Summary.** The American River Watershed Feasibility Report was completed in December 1991. The Supplemental Information Report, completed in March 1996, identified three candidate plans which would help reduce the flood risk facing Sacramento: modifying Folsom Dam and increasing the dedicated flood space; modifying Folsom Dam and the downstream system to allow increased objective releases; and constructing a detention dam upstream of Folsom Dam. In June 1996, the Chief of Engineers deferred a decision on a comprehensive flood control plan, but recommended

that features common to all three plans be authorized as the first component of a comprehensive plan. These elements are being constructed within the American River Watershed (Common Features) Project. SAFCA prepared the Folsom Dam Modification Report New Outlets Plan dated March 1998 (SAFCA Outlet Report), which identified proposed changes to the Folsom Modification Plan described in the 1996 Supplemental Information Report. The 1996 Supplemental Information Report as modified by the SAFCA Outlet Report was the basis for the project authorized under WRDA 1999. Funds used to initiate pre-construction engineering and design of the Folsom Modifications were allocated in Fiscal Year 2000 under the American River Watershed Project. Funds to initiate construction were appropriated in Fiscal Year 2001. The LRR, should be approved January 2004, will serve as the document to support the PCA. Due to new technologies being developed which produce a more accurate inventory of residential structures and changes in without-project conditions, benefits included in the LRR have changed since the 1992 Feasibility Report and the 1996 Supplemental Information Report (SIR).

## 7. AMERICAN RIVER WATERSHED, (Natomas Reimbursement)

**Location.** The project is located in the metropolitan area of Sacramento, California. The 1991 Feasibility Report identified a project including levee improvements around the perimeter of the Natomas Basin, a 300-acre detention area in North Natomas, and recreation trails.

**Existing Project.** The local sponsor, SAFCA, has constructed Natomas flood control features. The Natomas Federal Plan dated Mar 99 identified portions of the project eligible for reimbursement under the Memorandum of Agreement (MOA) signed Sep 99. Based on the MOA and the Federal Plan, initial reimbursement of \$15M for Phase I was made to SAFCA Sep 99. Estimated final reimbursement for Phase I of \$4.2M is unscheduled and will require reprogramming of funds. The sponsor has requested that the Corps design and construct the recreation features of the authorized project. Design of the recreation features has been completed. Construction of recreation features is currently unscheduled.

**Local Cooperation.** SAFCA is seeking

reimbursement for construction of local project features in addition to that eligible under Natomas Federal Plan (initial reimbursement in FY 02 estimated at \$5 million). The current MOA allows for reimbursement to SAFCA for the Federal share of the plan identified in the Natomas Federal Plan dated March 1999. The SAFCA flood control project (North Area Local Project, or NALP) was larger in scope than the plan in the Natomas Federal Plan. ASA (CW) agreed, by letter to SAFCA dated 13 Sep 99, that the Corps would reevaluate our conclusions on what part of SAFCA's NALP could be considered for reimbursement consistent with the authorization. SPK will reevaluate the previous conclusions, giving consideration to SAFCA's information, and prepare a report describing our conclusions and any recommendations. The scope and schedule of this effort are being developed. Additional reimbursement could range from \$8M-18M (Phase II).

**Historical Summary.** The Defense Appropriations Act for FY 1993 authorized construction of the Natomas flood control project (including recreation features), as defined in the feasibility report. The Act also authorized the sponsor to construct and receive reimbursement for the Federal share of project costs.

## 8. BUCHANAN DAM-H.V. EASTMAN LAKE, CHOWCHILLA RIVER, CA

**Location.** On Chowchilla River about 36 miles above its mouth and about 16 miles northeast of city of Chowchilla, CA. (See Geological Survey quadrangles for area.)

**Existing project.** Provides for construction of a 205-foot high rockfill dam to create a reservoir with gross storage capacity of 150,000 acre-feet for flood control, irrigation, recreation, and fish and wildlife. In conjunction with dam, project plan provides for about 12 miles of downstream levee and channel construction on Ash Slough to accommodate a project design flow of 5,000 cubic feet per second within slough and 7 miles of levee and channel improvement on Berenda Slough. Operation and maintenance of dam and reservoir is the responsibility of the Federal Government. Total first cost for existing project is \$28,919,597, of which \$27,369,597 is Federal cost, including \$4,580,000 for basic recreation facilities, and \$1,550,000 non-Federal costs for lands and damages, including relocations for downstream levee and channel improvements. Local interests have

contracted with the Bureau of Reclamation for irrigation service. For future non-Federal reimbursement, see Local cooperation paragraph. Local interests have also, over a period of years expended about \$500,000 for construction of low levees and clearing downstream channels to provide some local flood protection in project area. This work is inadequate during major floods. Existing project was adopted by 1962 Flood Control Act (S. Doc. 98, 87th Cong., 2d sess., contains latest published map). Lake formed by Buchanan Dam on Chowchilla River was designated "H.V. Eastman Lake" by Public Law 93-217.

**Local cooperation.** Fully complied with.

**Operations and results during fiscal year.** New work: None. Maintenance: Maintenance and operation activities were continued. Runoff of Chowchilla River above Buchanan Dam was above normal for the year. Maximum storage of 32,003 acre-feet occurred June 4, 2003. Maximum hourly inflow to reservoir was 1,900 cubic feet per second on December 17, 2002. Maximum release of 358 cubic feet per second on July 28, 2003, was above maximum permissible flood release. During the year, a total of 12,872 acre-feet of water was released for irrigation and other purposes. Releases for flood control purposes totaled 0 acre-feet.

**Historical summary.** Construction began in July 1971 and was completed in May 1979. Construction of Buchanan and Hidden dam and appurtenances was combined under one contract. Project was completed in September 1983, except for installation of piezometers (now deferred indefinitely). Dam closure was in March 1975; dam was completed in January 1976. Reservoir clearing and boundary marking were completed May 1975. Bifurcation structure was completed in February 1976. Channel improvement, Ash and Berenda Sloughs, was completed in March 1976. Recreation areas: Phase I was completed in January 1976; Phase II was completed in February 1978. Residences, administration building, and visitors center contract was completed in May 1978. Landscaping was completed in May 1979 and erosion control was completed in April 1979. A resources interpretive display and road relocation were completed in FY 1982. Dam safety assurance studies were initiated in FY 1981. Solar heating was installed at Chowchilla recreation area in FY 1984. An hydrilla eradication (spraying) program was initiated in FY

1989. Final land audit was approved on December 3, 1985.

## 9. CACHE CREEK BASIN, CA (Cache Creek Settling Basin)

**Location.** At the mouth of Cache Creek in Yolo County where it enters the Yolo Bypass about 2 miles east of city of Woodland and about 15 miles northwest of city of Sacramento, CA.

**Existing project.** Provides for raising the perimeter levees of the existing settling basin an average of 12 feet, extending the levees upstream to County Road 102 to provide 50-year sediment storage capacity, enlarging and reconstructing the cobble weir, and degrading existing training levees and rebuilding them adjacent to western perimeter levee to provide 50 years of sediment storage capacity (340 acre-feet annually). Estimated cost (October 2003) for existing project is \$27,000,000 (includes an allowance for estimated inflation through the construction period), of which \$16,900,000 is Federal and \$10,100,000 is non-Federal (which includes \$1,350,000 cash contribution). For future non-Federal reimbursement, see Local cooperation paragraph. Existing project was adopted by Water Resources Development Act of 1986, Public Law 99-662, November 17, 1986 (HD 98-134, 98th Cong., 1st sess, contains published map.) Project as authorized included development of a national wildlife refuge within the settling basin; however, the Department of the Army determined that such refuge would be more appropriately funded and developed by the U.S. Fish and Wildlife Service. Refuge feature was reclassified to deferred category on April 11, 1988.

**Local cooperation.** Local interests are required to provide lands, easements, rights-of-way, and dredged material disposal areas; modify or relocate buildings, utilities, roads, bridges (except railroad bridges) and other facilities where necessary in construction of the project; pay 5 percent of cost allocated to flood control, and bear all costs of operation, maintenance and replacement of flood control facilities. Local interests have agreed to make all required payments concurrently with project construction. Local Cooperation Agreement was executed March 12, 1990.

**Operations and results during fiscal year.** Engineering activities were continued.

**Historical summary.** Local Cooperation Agreement was executed March 12, 1990. Cache Creek Settling Basin enlargement (multicomponent) construction contract was awarded August 5, 1991, completed in September 1993, and work was transferred to local interests for operation and maintenance on December 2, 1993.

## 10. CALAVERAS RIVER AND LITTLEJOHN CREEK AND TRIBUTARIES, INCLUDING NEW HOGAN LAKE AND FARMINGTON DAM, CA

**Location.** Streams comprising Calaveras River and Littlejohn Creek groups rise in Sierra Nevada and its foothills, flow easterly across flatlands of San Joaquin Valley and empty into San Joaquin River directly, or through various sloughs, in vicinity of Stockton, CA. Littlejohn Creek is in Calaveras, Stanislaus, and San Joaquin Counties. The three principal stream systems of the group are, from south to north, Lone Tree Creek, Littlejohn Creek, and Duck Creek. Calaveras River group is in Calaveras and San Joaquin Counties. The two principal streams of the groups are, from south to north, Calaveras River and Bear Creek. (See Geological Survey Valley Springs quadrangle for New Hogan reservoir area and Trigo and Bachelor Valley quadrangles for Farmington reservoir area.)

**Existing project.** For description of completed improvements consisting of Farmington Dam, New Hogan Lake, and Bear Creek levee and channel improvement, and authorizing act, see Annual Report for 1967. (a) Farmington: Total first cost (July 1955) for project was \$3,995,684, of which \$3,676,384 was Federal and \$319,300 non-Federal for lands and damages including relocations. (b) New Hogan: Federal cost for project is \$15,906,150, including \$543,514 for basic recreation facilities. For future non-Federal reimbursement, see Local cooperation paragraph. Federal cost for recreation facilities funded from Code 710 appropriations is \$897,742. (c) Bear Creek: Project cost is \$6,485,734, of which \$3,242,867 is Federal, including reimbursement (\$488,096) to local interests of one-half of excess local interest cost of lands, rights-of-way, and relocations over estimated Federal construction cost in accordance with section 3, Public Law 738, 74th Congress. Non-Federal cost included in above amount

is \$3,242,867 for relocations and lands and damages, exclusive of above Federal reimbursement.

**Local cooperation.** Fully complied with. New Hogan: Local interests must pay portion of first cost and annual operation and maintenance costs allocated to conservation functions of project. These costs are estimated at 36.2 percent of first cost and 38 percent of annual costs. In addition, local interests contributed land, the (July 1964) market value of which was \$556,000. For years 1961 through 1970, an interim contract between the Bureau of Reclamation and local water users provided for storage and payment of irrigation water; a long-term contract between that agency and local water users was executed August 25, 1970. Local interests paid \$5,401,959 through December 31, 2002. A concessionaire at New Hogan Marina provided public use facilities in accordance with lease agreement with the Secretary of the Army at an estimated cost to date of \$234,000.

**Operations and results during fiscal year.** New work: New Hogan Lake, regular funds: None. Code 710 funds: None. Bear Creek, San Joaquin County: None. Maintenance: Farmington Dam Maintenance and operation activities continued; structures were maintained in serviceable condition. During rain flood season, maximum flow of Duck Creek Diversion was 458 cubic feet per second on December 16, 2002. Maximum flow of Littlejohn Creek at Farmington was 558 cubic feet per second on December 16, 2002. Maximum flow of Duck Creek near Farmington was 263 cubic feet per second on December 16, 2002. Maximum storage in reservoir was 308 acre-feet on December 16, 2002, and maximum estimated inflow to reservoir was 1,550 cubic feet per second on December 16, 2002. Maximum release of 430 cubic feet per second on December 16, 2002, was above maximum permissible flood release. During the year, 16,791 acre-feet was released for flood control. Release for irrigation purposes amounted to 118,362 acre-feet. New Hogan Lake Maintenance and operation activities continued. Structures were maintained in serviceable condition. Runoff of Calaveras River above New Hogan was above normal for the year. Maximum storage of 162,316 acre-feet occurred December 16, 2002. Maximum hourly inflow to reservoir was 4,010 cubic feet per second on December 16, 2002. During the year, 74,338 acre-feet was released for irrigation and other purposes. Release for flood control purposes amounted to 0 acre-feet.

**Historical summary.** Farmington Dam: Construction of Farmington project was initiated in July 1949 and completed for beneficial flood control operation in 1952. Duck Creek channel improvement was completed in November 1951; and channel improvement on south Littlejohn Creek was completed in May 1955. There are no recreation facilities or public-use areas. All work completed. Dam safety assurance studies were initiated in FY 1982. New Hogan Lake: Construction was initiated May 1960, main dam closure November 1963, project completed for operational use in June 1964, and all work completed October 1973. Recreation facilities have been provided from Code 710 appropriations. See page measurement weir constructed in June 1980. Dam safety assurance studies were initiated in FY 1980. Bear Creek, San Joaquin County: Construction began in June 1963 and was completed in June 1967. Final cash contribution was made to local interests December 23, 1970. Solar heating was installed at recreation facilities in FY 1984. A cultural resources survey was completed in FY 1984.

## 11. COLORADO RIVER AT GRAND JUNCTION, CO

**Location.** On north bank of Colorado River from 9th Street west to the Denver Rio Grande Western Railroad Bridge at city of Grand Junction, CO, in Mesa County.

**Existing project.** Provides for construction of a 3,200 foot levee located on north side of Colorado River, one road ramp over levee for accessing Watson Island, 3 detention basins, a relief well system and a 550-foot-long impermeable blanket to prevent seepage through railroad embankment. Estimated cost (September 1994) is \$1,651,200, of which \$1,086,700 is Federal cost and \$564,500 is non-Federal cost for lands and damages and includes a cash contribution of \$63,000. Existing project was approved by Chief of Engineers on February 28, 1994, under provisions of section 205, 1948 Flood Control Act, as amended.

**Local cooperation.** Local sponsor shall furnish to the Government all lands, easements, and rights-of-way, including suitable borrow and dredged material disposal areas, as determined by the Government to be necessary for construction, operation, and maintenance of the project, and shall furnish to the Government evidence supporting local sponsor's legal



authority to grant rights-of-entry to such lands. Necessary lands, easements, and rights-of-way may be provided incrementally, but all lands, easements, and rights-of-way determined by the Government to be necessary for work to be performed under a construction contract must be furnished prior to advertisement of the construction contract.

Local sponsor shall provide or pay to the Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins that may be required at any dredged material disposal areas necessary for project construction.

Upon notification from the Government, local sponsor shall accomplish or arrange for accomplishment at no cost to the Government all relocations (excluding railroad bridges and approaches thereto) determined by the Government to be necessary for project construction.

Local sponsor shall comply with all applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act. Local sponsor shall provide such documentation as contracting officer requires to demonstrate compliance.

The Local Cooperation Agreement (LCA) between the Department of the Army and the City of Grand Junction, CO, was signed April 8, 1994.

**Operations and results during fiscal year.** O&M Manual and As-Built drawings were finalized. Project audit, closeout activities and fiscal completion continued.

**Historical summary.** Plans and specifications were completed in August 1994. Non-Federal cash contribution of \$63,000 for construction was received September 27, 1994. First construction contract in amount of \$575,830 was awarded September 30, 1994.

## 12. CORTE MADERA CREEK, CA

Reported on by San Francisco District. Refer to Report of the Secretary of the Army on Civil Works Activities for FY 1996.

## 13. COYOTE CREEK, CA (Known As Coyote And Berryessa Creeks)

**Location.** Project is located in the cities of San Jose and Milpitas immediately south of San Francisco Bay in Santa Clara County, CA.

**Existing project.** Plan of improvement on Coyote Creek consists of overflow channels and offset levees. Improvement on Berryessa Creek includes two sedimentation basins at the upstream end of the concrete lined trapezoidal channel and offset levees. Combined plan would provide flood protection from Coyote and Berryessa Creeks to cities of San Jose and Milpitas, which include large industrial complexes and some residential development. Estimated cost (October 1998) for the Coyote Creek element of the existing project is \$61,750,000 (includes an allowance for estimated inflation through the construction period), of which \$30,890,000 is Federal and \$30,860,000 is non-Federal (which includes \$3,100,000 cash contribution). For future non-Federal reimbursement, see Local cooperation paragraph. Estimated cost (October 1998) for the Berryessa Creek element of the existing project is \$16,525,000 (includes an allowance for estimated inflation through the construction period), of which \$12,425,000 is Federal and \$4,100,000 is non-Federal (which includes \$1,830,000 cash contribution). Existing project was authorized under Section 101(a)(5) of WRDA 1990, Public Law 101-640 (HD 101-126, 101st Cong., 2d sess.).

**Local cooperation.** (Coyote Creek) Local interests are required to provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas, which may be reduced for credit allowed based on prior work (Sec. 104 of WRDA 86 (\$8,633,000), Sec. 26 of WRDA 88 (not to exceed \$3,000,000) and Sec. 215 of the Flood Control Act of 1968 (not to exceed \$3,000,000) after reductions for such credit have been made in the required cash payments; modify or relocate utilities, roads, bridges (except railroad bridges), and other

facilities, and perform prior work under Sec. 104 of WRDA 86, Sec. 26 of WRDA 88, and Sec. 215 of the Flood Control Act of 1968, where necessary for the construction of the project; and pay 5 percent of the costs allocated to flood control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities. Local interests will receive an estimated Federal reimbursement of \$8,280,000 for one-half of non-Federal costs allocated to flood control in excess of Federal costs (Sec. 103 of WRDA 86). (Berryessa Creek) Local interests are required to provide lands, easements, rights-of-way, and borrow and excavated or dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities, where necessary in the construction of the project; and pay 11 percent of the costs allocated to flood control to bring the total non-Federal share of flood control costs to 25 percent, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities. The non-Federal sponsor has also agreed to make all required payments concurrently with project construction.

**Operations and results during fiscal year.** Coyote Creek mitigation contract continued at a fiscal year cost of \$162,711.

**Historical summary.** Separate General Design Memorandums were prepared for Coyote and Berryessa Creeks. General Design Memorandum for Coyote was submitted in May 1993. Local interests have completed construction of Reach 1 (Sec 104, Water Resources Development Act (WRDA), Reach 2 (Sec 26, WRDA) and Reach 3A (Sec 215, WRDA). National Defense Authorization Act for FY 1994 directed the Secretary of the Army to construct project notwithstanding sec 902, WRDA. Project Cooperation Agreement was executed in September 1994. Coyote Creek Reach 3B construction contract was completed at a final cost of \$5,308,925. Preconstruction engineering and design cost is \$4,410,000. Total reimbursement of \$7,400,000 for costs in excess of 50% maximum requirement and credit payments of \$14,633,000 for prior integral work, have been made to the local sponsor as of September 30, 1997.

#### **14. FAIRFIELD VICINITY STREAMS, CA**

**Location.** On five streams in vicinity of cities of Fairfield and Suisun, Solano County, CA.

**Existing project.** See Annual Report for 1996, p.35-8.

#### **15. GUADALUPE RIVER, CA**

**Location.** On Guadalupe River in downtown area of city of San Jose, Santa Clara County, CA.

**Existing project.** Authorized plan provides for widening and deepening one or more sides of Guadalupe River for 2.5 miles from Interstate Highway 280 to Interstate Highway 880 in downtown San Jose, CA, and channel modifications with provisions for fish and wildlife mitigation, as necessary. Non-Federal sponsor must pay 100 percent of incremental construction cost of locally preferred plan. Project is an integral component of a much larger regional park plan being undertaken by the San Jose Redevelopment Agency.

Estimated cost (October 2000) is \$182,800,000 (which includes an allowance for estimated inflation through the construction period) of which \$78,500,000 is Federal and \$104,300,000 is non-Federal including reimbursement, see Local cooperation paragraph. Existing project was adopted by Water Resources Development Act of 1986, Energy and Water Development Appropriation Act of 1990 which directed the Secretary of the Army to construct the project notwithstanding Sec. 902 of the Water Resources Development Act of 1986 regarding project cost limitations, and Energy and Water Development Appropriations Act of 1992 which directed the Secretary of the Army to modify and construct the project in accordance with the January 1991 GDM; it is consistent with the Guadalupe River Park plan requested by the local sponsor and with cost sharing policy.

**Local cooperation.** Local interests, through a public body legally authorized and financially capable, must give assurances they will furnish lands, easements, rights-of-way, and dredged material disposal areas, which are partially offset by a credit (\$5,701,000) allowed for prior work (Sec. 104, Water Resources Development Act of 1986); credit was approved by the Assistant Secretary of the Army; modify or relocate buildings, utilities, roads, bridges (except railroad bridges), and other facilities, where

necessary in the construction of the project; pay 5 percent of the costs allocated to flood control; and bear all costs of operation, maintenance, and replacement of flood control facilities. Federal reimbursement will be made to non-Federal sponsor for one-half of non-Federal costs allocated to flood control in excess of Federal costs. Local interests have agreed to make all required payments concurrently with project construction.

On June 2, 1989, the local sponsor, the Santa Clara Valley Water District, expressed intent to provide all needed cost sharing funds. On September 21, 1990, the San Jose Redevelopment Agency requested modification of project to include recreation facilities and confirmed that they intend to participate as local sponsor for recreation. Local Cooperation Agreements for both flood control and recreation were executed March 30, 1992.

**Operations and results during fiscal year.** Construction contract No. 2 (Hedding Street to Coleman Avenue) was completed with fiscal year cost of \$257,000 (Interstate 880 to Hedding Street). Fiscal year mitigation costs included Early Plant collection for Contract 2 (Hedding Street to Coleman Avenue) of \$15,000 and River Street Historic Salvage and Demolition \$560,000.

**Historical summary.** Final General Design Memorandum (GDM) reflecting locally preferred plan, was approved by the Assistant Secretary of the Army on March 26, 1992, with comments. Revision of GDM to address comments was completed in July 1993. Local Cooperation Agreements for both flood control and recreation were executed March 30, 1992. Construction contract No. 1 for channel improvement (Highway 880 to Hedding Street) was awarded August 10, 1992; and was essentially completed and transferred to local interests for maintenance and operation on August 11, 1994. Construction contract No. 2 (Hedding Street to Coleman Avenue) was awarded July 8, 1994, and was essentially completed and transferred to local interests for maintenance and operation on October 25, 1996.

## **16. HIDDEN DAM-HENSLEY LAKE, FRESNO RIVER, CA**

**Location.** On Fresno River about 50 miles above its mouth and about 15 miles northeast of Madera, CA (See Geological Survey quadrangles for area.)

**Existing project.** Provides for construction of a 163-foot high earthfill dam to create a reservoir with gross storage capacity of 90,000 acre-feet for flood control, irrigation, recreation and other purposes. In conjunction with the dam, the project provides for about 13 miles of downstream levee and channel improvements on Fresno River immediately upstream of Chowchilla Canal crossing to accommodate project design flow of 5,000 cubic feet per second. Operation and maintenance of dam and reservoir is the responsibility of the Federal Government. Total first cost for existing project is \$31,785,426, of which \$30,555,426 is Federal cost, including \$3,564,168 for basic recreation facilities, and estimated \$1,230,000 non-Federal cost for lands and damages including relocations for downstream levee and channel improvements. Local interests have contracted with the Bureau of Reclamation for irrigation service. For future non-Federal reimbursement, see Local cooperation paragraph. Local interests have also, over a period of years, expended about \$300,000 for construction of low levees and clearing downstream channels to provide some local flood protection in the project area. This work is inadequate during major floods. Existing project was adopted by 1962 Flood Control Act (S. Doc. 37, 87th Cong., 1st sess., contains latest published map). Lake created by Hidden Reservoir project on Fresno River was designated "Hensley Lake" by Public Law 93-603.

**Local cooperation.** Fully complied with.

**Operations and results during fiscal year.** New work. None. Maintenance: Maintenance and operation activities were continued. Runoff of Fresno River below Hidden Dam was above normal for the year. Maximum storage of 36,637 acre-feet occurred June 10, 2003. Maximum hourly inflow to the reservoir was 557 cubic feet per second on March 16, 2003. Maximum release of 242 cubic feet per second on June 23, 2003, was above maximum permissible flood release. During the year, 25,987 acre-feet was released for irrigation and other purposes and 0 acre-feet was released for flood control.

**Historical summary.** Construction began in July 1971 and was completed in January 1979. Dam closure was in March 1975; dam was completed November 1975. Instrumentation was completed in January 1976. Downstream channel improvement, Fresno River, was completed April 1976. Recreation

areas: Phase I was completed in March 1976; Phase II was completed in June 1978. Residences, administration building, grounds, and utilities contract was completed in February 1978. Landscaping was completed in December 1978 and erosion control was completed in January 1979. Project was completed in September 1980. Final land audit was approved February 5, 1980. Dam safety assurance studies were initiated in FY 1980. Piezometer installation was completed in September 1982. Solar heating was installed at County relinquished all administration of recreation and development and maintenance of public use areas at the recreation areas in FY 1984.

## 17. ISABELLA LAKE, KERN RIVER, CA

**Location.** About 35 miles northeast of city of Bakersfield, CA, near confluence of north and south forks of Kern River; auxiliary dam is about one-half mile east of main dam. (See Geological Survey quadrangles of area.) In 1991, Isabella Lake and 16,000 acres of surrounding land was transferred to the Forest Service in exchange for about 2,500 acres of Forest Service land near Pine Flat Lake.

**Existing project.** For description of completed improvement and authorizing act, see Annual Report for 1967. Federal cost for new work is \$22,027,452. For future non-Federal reimbursement see Local cooperation and Licenses paragraphs. Federal cost funded from Code 710 appropriations is \$2,199,085. Operation and maintenance of dam and reservoir is Federal responsibility.

**Local cooperation.** California officially adopted project by chapter 1514 of statutes of 1945, State of California. Local interests, represented by North Kern, Buena Vista, and Tulare Lake Basin Water Storage Districts and La Hacienda Water District, were required to reimburse the Federal Government the portion of first cost and annual operation and maintenance costs allocated to irrigation functions of project. These costs, based on a cost allocation study completed in December 1955, are \$4,573,000 of first cost and 21.7 percent of annual operation and maintenance cost. For the years 1956 through 1964, an interim contract between the Bureau of Reclamation and local water users provided for storage and payment of irrigation water. Under provisions of this interim contract, local interests paid \$1,936,229 through December 31, 1964. A long-term

contract between the Bureau and local water users was executed October 23, 1964. Balance due on allocated first cost of \$4,573,000 was paid by the water users on March 31, 1965. Kern County assumed administration of recreation and development and maintenance of public use areas at project in accordance with a 25-year license February 15, 1955. The agreement with Kern County provided for joint operation and development by the Corps and Kern County including permits granted to concessionaires by the county to provide certain services. As of September 30, 1971, Kern project. A State law permitting the Department of Boating and Waterways (known as the Department of Navigation and Ocean Development prior to January 1979) to participate in inland water development with Federal agencies was signed by the Governor on August 11, 1972. Isabella Lake and surrounding land, 16,000 acres around the lake currently being used for park and recreation purposes, was turned over to the Forest Service by the Corps on May 15, 1991, in exchange for approximately 2,500 acres of Forest Service recreation land near Pine Flat Lake. This was accomplished by using a memorandum of understanding (MOU) between the Secretary of the Army and the Secretary of Agriculture (Forest Service). The MOU requires an exchange of land between departments. Three Corps maintenance employees, under supervision of the Success Lake park manager, will stay at Isabella to operate the dam for flood control and water conservation purposes. Authority for new concessionaire operating permits to be issued, as well as those previously granted by the Corps, will be transferred to the Forest Service.

Total cost to date of present recreation facilities developed by the county and the marina concessionaires is about \$965,000; \$235,000 of this was a grant from the California Wildlife Conservation Board and about \$534,000 is investment by marina concessionaires.

**Licenses.** In accordance with Federal Power Commission Docket No. E-6578, issued April 1, 1963, payment of \$377,426 was made to the Federal Government by Pacific Gas and Electric Co. (\$108,352) and Southern California Edison Co. (\$269,074) for headwater benefits to downstream existing plants from Isabella Dam to cover benefits from April 15, 1954, to December 31, 1962. Between 1962 and 1982, the power companies have in the aggregate made annual payments of \$44,650 for

headwater benefits. That amount was to be paid each year until changes in operation, development, or costs indicated some modification to be advisable. Federal Power Commission Docket No. E-6578 was revised by Docket No. HB07-75-4-000 (order issued July 11, 1983 under 24 FERC, paragraph 62052) which modified cumulative use charges after 1974, effective retroactively. Such charges will now vary each year. An adjustment (years 1974 through 1984) was included in 1984 payment of \$244,790. The 1985 payment was \$52,747; 1986 payment was \$51,905. No payment was received in 1987. The 1988 payment was \$58,187. No payment was received in 1989. Two payments (\$60,894 and \$55,443) were received in 1990; \$60,983 was received in 1991; \$65,975 in October 1991 (FY 1992) \$77,577 in October 1992 (FY 1993), and \$62,231 in October 1993 (FY 1994). Cumulative use charges collected by the Federal Power Commission (known as the Federal Energy Regulatory Commission since January 9, 1978) and returned to the U. S. Treasury through period ending September 30, 1995, amounted to \$2,150,458.

**Operations and results during fiscal year.** New work, regular funds: None. Code 710 funds: None. Maintenance: Maintenance and operation continued. Structures were maintained in good condition. Runoff of Kern River above Isabella Dam was above normal for the year. Maximum storage of 305,075 acre-feet occurred June 10, 2003. Maximum hourly inflow to the reservoir was 23,022 cubic feet per second on November 8, 2003 and maximum outflow of 1,472 cubic feet per second occurred June 10, 2003. During the year, 452,699 acre-feet was released for irrigation and 0 acre-feet was released for flood control.

**Historical summary.** Construction began in March 1948 and was completed in June 1968. Main dam, Borel Canal outlet works and appurtenances, and auxiliary dam were completed in April 1953. Storage impoundment began December 1952. Piezometer was installed in August 1982. Project is operating to provide flood protection and irrigation benefits for which it was designed. Recreation facilities were provided by Code 710 funds. Dam safety assurance studies were initiated in FY 1979. A cultural resources survey was completed in FY 1984. On May 15, 1991, Isabella Lake and surrounding land, 16,000 acres around the lake currently being used for park and recreational purposes, was turned over to the Forest Service by the Corps in exchange for approximately 2,500 acres of Forest Service recreation land near Pine

Flat Lake. A memorandum of understanding (MOU) between the Secretary of the Army and the Secretary of Agriculture (Forest Service) was used. The MOU requires an exchange of land between departments. Three Corps maintenance employees, under supervision of the Success Lake park manager, will stay at Isabella to operate the dam for flood control and water conservation purposes.

## 18. KAWEAH AND TULE RIVERS, INCLUDING TERMINUS DAM AND SUCCESS LAKE, CA

**Location.** Terminus Dam is on Kaweah River about 20 miles east of Visalia, CA. Success Lake is on Tule River about 5 miles east of Porterville, CA. (See Geological Survey quadrangles of area.)

**Existing project.** Terminus Dam: For description of completed improvement and authorizing act, see Annual Report for 1975. Federal cost of new work is \$19,302,957, including \$242,605 for basic recreation facilities and excluding spreading works constructed by local interests at an estimated (July 1957) cost of about \$750,000. Spreading works portion of project has been deauthorized. The 90-day Congressional project review period, required by sec. 12, Public Law 93-251, as amended, ended August 5, 1977, and resulted in deauthorization of that portion of project. Federal cost of recreation facilities funded from Code 710 appropriations is \$700,004. Success Lake: For description of completion improvement and authorizing act, see Annual Report for 1975. Federal cost of new work for Success Lake is \$14,247,221, including \$253,697 for basic recreation facilities. Federal cost of recreation facilities funded from Code 710 appropriations is \$747,048. For future non-Federal reimbursements, see Local cooperation paragraph. Operation and maintenance of reservoirs is Federal responsibility.

**Local cooperation.** California officially adopted projects by chapter 1514 of statutes of 1945, State of California. Local interests for Terminus Dam are represented by Kaweah Delta Water Conservation District. Local interests for Success Lake are considered to be represented by the Vandalia, Porterville, and Lower Tule River Irrigation Districts, the Tulare Lake Basin Water Storage District, and Pioneer Water Co., which represent over 90 percent of irrigated land and water-right holders along Tule

River below damsite. Local interests must reimburse the Federal Government the portion of first cost and annual operation and maintenance costs allocated to irrigation functions of projects. These costs are estimated at 14.1 percent of first and annual costs for Terminus and 9.5 percent of first and annual costs for Success. Local interests for Terminus stated they will continue to operate and maintain spreading works and downstream channel systems to provide required capacity for disposal of floodwaters. Local interests for Success stated they will continue to maintain downstream channel systems to provide required capacity for disposal of floodwaters. Repayment contracts between the Bureau of Reclamation and local water users for irrigation supply from Terminus and Success reservoirs were executed January 11, 1965, and April 30, 1965, respectively. Reservoirs are being operated for irrigation storage as well as flood control and incidental recreation use. Tulare County acquired water for recreation pools at the projects. Local interests paid the following total amounts for irrigation services from the reservoirs through December 31, 2002: Terminus, \$2,623,460 and Success, \$1,307,574. Tulare County was granted a 25-year license for planning, development, and management of public recreation areas at Success, July 10, 1960, and at Terminus, June 5, 1961. Basic public-use facilities constructed by Corps at the Success reservoir were transferred to jurisdiction of Tulare County on January 18, 1962; facilities at Terminus were transferred June 20, 1962. In March 1967, an amendment to the license agreements was approved by the Assistant Secretary of the Army. Under these amended licenses, Tulare County retained administration of only specified land areas and operation and maintenance of recreation facilities in these areas. In addition, they continued their program of water safety, boat inspection, and law enforcement at both reservoirs. The Corps took over the administration of the remainder of the project land areas and the operation and maintenance of recreation facilities in these areas. Calif. Department of Fish and Game expended funds to improve fishery resources of the Terminus reservoir. As of April 1, 1972, Tulare County relinquished all planning, development, and management of public recreation areas at Terminus Dam. Tulare County by expenditure of county funds and by a lease to a marina concessionaire has aided in the development of recreation facilities at an estimated cost of \$199,000. Calif. Department of Fish and Game expended funds in conjunction with Tulare Sportsman's Council and developed a habitat for

upland game birds at Success Lake. As of April 1, 1972, Tulare County relinquished all planning, development, and management of public recreation areas at Success Lake, except for the Bartlett Park recreation area. Tulare County has aided in development of recreation facilities. Total cost to date of present recreation facilities developed by the county (\$360,000) and the marina concessionaires (\$373,000) is about \$733,000.

**Operations and results during fiscal year.** New work: Terminus Dam, regular funds: None. Code 710 funds: None

Success Lake, regular funds: None. Code 710 funds: None.

Maintenance: Terminus Dam: Maintenance and operation continued. Dam safety assurance studies were continued at a fiscal year cost of \$118,300. Structures were maintained in serviceable condition. Runoff of Kaweah River above Terminus Dam was above normal for the year. Maximum storage of 121,708 acre-feet occurred on May 28, 2003. Maximum hourly inflow to the reservoir on November 8, 2002, was about 30,273 cubic feet per second. Maximum outflow of 3,698 cubic feet per second occurred May 29, 2003. Irrigation and spreading releases totaled 350,756 acre-feet. Releases for flood control totaled 75,290 acre-feet. Success Lake: Maintenance and operation continued. Relief wells were placed at a fiscal year cost of \$120,000. Structures were maintained in serviceable condition. Runoff of Tule River above Success Dam was above normal during the year. Maximum storage of 73,964 acre-feet occurred on June 10, 2003. Maximum hourly inflow to the reservoir was 20,458 cubic feet per second on November 8, 2003, and maximum outflow of 720 feet per second occurred on November 10, 2003. Irrigation and spreading releases amounted to 18,110 acre-feet. Releases for flood control amounted to 106,895 acre-feet.

**Historical summary.** Terminus Dam: Construction of project began in July 1957 and was completed in June 1968. Final land audit was approved on April 20, 1987. Construction of main dam and appurtenances, initiated in February 1959, was completed in June 1962. Dam has been operating since November 1961 to provide flood protection for which it was designed; conservation impoundment was commenced May 1962. Appurtenances are in

good condition. Recreation facilities were provided by Code 710 funds. Dam safety assurance studies were initiated in FY 1979 and completed in FY 1989. Piezometer installation and a cultural resources survey were completed in FY 1984. Success Lake: Construction of project began in November 1956, was completed in June 1968, and final audit of historical land record was approved December 17, 1979. Construction of main dam and appurtenances, initiated in October 1958, was completed in May 1961. Dam has been operating since October 1960 to provide flood protection for which it was designed; conservation impoundment was commenced March 1962. Recreation facilities were surveyed and completed in FY 1984.

## 19. LITTLE DELL LAKE, UT

**Location.** On Dell Creek, a tributary of Parleys Creek, about 8 miles east of Salt Lake City upstream of Mountain Dell Reservoir in Salt Lake County, UT.

**Existing Project.** Project providing for construction of a dam about 253 feet high to create a reservoir with a gross capacity of 30,000 acre-feet for flood control, municipal and industrial water supply, recreation and fish and wildlife was authorized by the 1968 Flood Control Act (S. Doc. 53, 90th Cong., 1st sess., contains published map) as modified by sec. 170, Water Resources Development Act of 1976, Public Law 94-587, October 22, 1976. Facility would be operated in conjunction with existing downstream 3,200 acre-foot Mountain Dell Reservoir on Parleys Creek for flood control and water supply.

Authorized project had been reexamined and scaled down to reflect local interests' ability to pay. Recreation was deferred as of May 30, 1986, and Emigration Creek Diversion was deleted and placed in an inactive status. Recreation was reactivated in 1995 and the Recreation DM approved in 1996. The project includes an earthfill dam 224 feet high, a 20,500 acre-foot reservoir, and 10,035 feet of pipeline to divert water from Parleys Creek. Estimated project cost (September 2003) is \$64,100,000 (includes an allowance for estimated inflation through the construction period) of which \$40,600,000 is Federal and \$23,500,000 is non-Federal for lands and damages and includes a cash contribution of \$17,000,000. Project is included in FY 1985 Supplemental Appropriations Act (Public Law 99-88) August 15, 1985.

**Local cooperation.** Local interests are required to provide lands, easements, rights-of-way, and dredged material disposal areas; modify or relocate buildings, utilities, roads, bridges (except railroad bridges), and other facilities where necessary in the construction of the project; pay all costs allocated to municipal and industrial water supply; pay 20 percent of costs allocated to flood control to bring total non-Federal share of flood control costs to 25 percent, pay 50% of joint recreation costs, and bear all costs of operation, maintenance, and replacement of flood control facilities.

**Operations and results during fiscal year.** Mitigation establishment continued.

**Historical summary.** A Local Cooperation Agreement (Sec. 221) was executed June 10, 1986. Construction was initiated in April 1988. Construction of core trench and test fill was completed in February 1989. Main dam and appurtenances contract was awarded May 12, 1989 and completed in September 1993. Project was transferred to the local sponsor for maintenance and operation on March 26, 1993. Dam was dedicated on August 5, 1993.

## 20. MARTIS CREEK LAKE, MARTIS CREEK, NV AND CA

**Location.** Reservoir is on Martis Creek a tributary of Truckee River, near Truckee, CA; intermittent channel improvements are on Truckee River in Reno, NV. (See Geological Survey quadrangles for areas.)

**Existing project.** For description of completed improvement and authorizing act, see Annual Report for 1975. Federal cost for project was \$8,503,789 including \$289,506 for basic recreation facilities. Federal cost of recreation facilities funded from Code 710 appropriations was \$1,200. Construction of recreation facilities under Code 710 was determined to be infeasible. Operation and maintenance of reservoir is Federal responsibility.

**Local cooperation.** Fully complied with.

**Operations and results during fiscal year.** New work: None. Maintenance: Maintenance and operation of project, including recreation facilities, was continued. Structures were maintained in

serviceable condition. Runoff above Martis Creek Dam was above normal for the year. Maximum storage of 973 acre-feet occurred on March 16, 2003. Maximum inflow to the reservoir was 216 cubic feet per second on March 15, 2003, and maximum outflow of 76 cubic feet per second occurred January 27, 2003. During the year, 15,069 acre-feet was released for irrigation purposes. Releases for flood control amounted to 0 acre-feet.

**Historical summary.** Project construction began in August 1967; dam closure was in October 1971; dam completed in August 1972; basic recreation facilities were completed in December 1972; and project was completed in June 1974. Recreation facilities under Code 710 funding were considered infeasible. Dam safety assurance studies were initiated in FY 1981.

## **21. MERCED COUNTY STREAMS, CA**

**Location.** In vicinity of city of Merced, CA, on streams draining from Mariposa County foothills of the Sierra Nevada into Merced County. Streams lie easterly of and drain into the San Joaquin River between Chowchilla River on the south and Merced River on the north. Drainage area represents about 1,000 square miles; nearly 700 square miles of foothills and mountains in Mariposa County and about 300 square miles of flood plain in Merced County. (See Geological Survey quadrangles for area.)

**Existing project.** Project is a modification of Merced County Stream Group, Calif., Improvement No. 18, authorized by 1944 Flood Control Act (H. Doc. 473, 78th Cong., 2d sess.) and completed in FY 1957. Existing project provides for enlargement of four existing reservoirs Burns, Bear, Owens, and Mariposa, providing a total capacity of 117,900 acre-feet for multipurpose storage; channel improvements in reaches of Bear, Black Rascal, and Deadman Creeks, thereby tying the existing project channels into the USFWS grasslands and into Eastside Bypass of San Joaquin River flood control system. Bear, Burns, and Owens projects would provide flood control only; Castle and Burns projects, flood control and recreation; Marguerite project, flood control and irrigation; and Mariposa project, all three purposes. Existing project was adopted by 1970 Flood Control Act.

Current plan of improvement would defer enlargement of existing Mariposa reservoir and the irrigation function associated with the latter two facilities, enlargement of existing Owens reservoir and about 32 miles of levee and channel improvement on Owens, Mariposa, and Deadman-Dutchman Creeks. Estimated total project cost (October 1996) is \$132,700,000 (includes an allowance for estimated inflation through the construction period), of which \$91,800,000 is Federal and \$40,900,000 is non-Federal (which includes a \$6,855,000 cash contribution).

**Local cooperation.** Local interests are required to provide lands, easements, and rights-of-way and dredged material disposal areas; modify or relocate buildings, utilities, roads, and other facilities, where necessary in the construction of the project; pay one-half of the separable and joint costs allocated to recreation, presently estimated at \$282,000, of which \$240,000 is a cash contribution and \$42,000 is for lands; and bear all costs of operation, maintenance, and replacement of flood control facilities. Total non-Federal share of Castle Dam first cost is \$5,230,000 and includes cash contribution of \$595,000.

The California Reclamation Board and the City of Merced are the local sponsors of the authorized project. The Reclamation Board will serve as sole sponsor for the Castle Dam Unit. Merced County Board of Supervisors reaffirmed their support for the project by letter of April 4, 1986. City of Merced by letter of March 13, 1986, reaffirmed its support for and intent to furnish assurances for recreation aspects of the project. California Reclamation Board reaffirmed its support for total project by letter of April 9, 1986. A Local Cooperation Agreement (Sec. 221) was executed for Castle Dam Unit on June 27, 1986. State of California legislation (AB3369) was enacted on September 14, 1986 which enabled the Reclamation Board to financially participate in the project. A new Local Cooperation Agreement (LCA) was signed by the Assistant Secretary of the Army November 30, 1988, in accordance with the Water Resources Development Act of 1986. The California Reclamation Board, the Merced County Board of Supervisors and the city of Merced have indicated support for balance of the project by letters of intent dated August 29, 1991 and August 20, 1991, respectively. This support was again reaffirmed in letters of support as provided by the California



Reclamation Board on January 9, 1996.

**Operations and results during fiscal year.** Engineering activities continued for Bear Creek Dam Unit. Castle was transferred to sponsor for maintenance and operation in April 1995.

**Historical summary.** Castle Dam multicomponent construction contract was awarded February 26, 1991, and construction was completed in March 1993. Castle Dam check structure contract was initiated in April 1993 and completed in January 1994. Castle Dam was transferred to the sponsor on April 12, 1995, and accepted by the sponsor in FY 2000.

## **22. MERCED COUNTY STREAM GROUP, CA**

**Location.** Reservoirs and channel improvements are on Bear, Burns, Mariposa, and Owens Creeks, in foothills of Sierra Nevada about 15 to 20 miles east of city of Merced, CA. (See Geological Survey Haystack Mountain quadrangle for Burns and Indian Gulch quadrangle for Bear, Owens, and Mariposa areas.)

**Existing project.** For description of completed improvements and authorizing act, see Annual Report for 1962. Improvements consist of reservoirs at Mariposa, Owens, Burns and Bear Creeks and diversions from Black Rascal Creek to Bear Creek and from Creek to Mariposa Creek. Total first cost for project was \$3,899,259, of which \$2,751,259 was Federal and \$1,148,000 non-Federal for lands including relocations and channel improvement.

**Local cooperation.** Fully complied with.

**Operations and results during fiscal year.** Maintenance: Ordinary maintenance and operation of the four completed reservoirs continued. Structures were maintained in a serviceable condition. Runoff from drainage areas below Merced County stream group reservoirs was above normal for the year. See Table 35-K for maximum inflow storage and outflow for the projects. Outflows were less than channel capacity rates in the project streams.

**Historical summary.** Construction was initiated March 1948, with construction of Mariposa project, which was completed in November 1948. Construction of Owens project, initiated in March, was completed in October 1949; Burns project, initiated in

July 1949, was completed in January 1950; and Bear project initiated in April, was completed in December 1954. Black Rascal and Owens Creek diversion channels and stream-gaging stations were completed in April 1956. Local interests completed channel enlargement and restoration of channel capacities of Miles, Burns, Owens, and Mariposa Creeks in 1956 at their expense. Improvement of Bear Creek and Black Rascal Slough, below their confluence, was deferred pending possible improvements downstream, outside limits of project.

## **23. NAPA RIVER, CA**

**Location.** The project is located in the city and county of Napa, California. The Napa River drainage basin, comprising 426 square miles, is just north of San Pablo Bay and approximately 40 miles northeast of San Francisco, California.

**Existing project.** A major portion of the presently developed area of the city is located in a high flood hazard area and is subject to flooding. The project consists of modifications to provide the project area with 100-year level of flood protection from Napa River and Napa Creek. Channel modifications include overbank excavation, vertical walls, floodwalls, levees, bridge modifications, pumping stations and flowage easements. The project also includes recreation trails and incidental ecosystem restoration. Current total project cost estimate is \$256,000,000 and is to be cost shared 50% Federal and 50% local sponsor.

**Local cooperation.** In March 1998, the Napa County electorate passed "Measure A" to fund the non-Federal share of the project. In February 2000, Napa County Flood Control and Water Conservation District, the local sponsor, signed a Project Cooperation Agreement for the project. The sponsor will furnish lands, easements, rights of way and borrow and excavated or dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges) and other facilities where necessary for the construction of the project; provide 5 percent of the costs allocated to flood control and bear all costs of operation, maintenance, repair, rehabilitation and replacement for flood control facilities; and pay one-half of the separable costs allocated to recreation (except recreational navigation) and bear all costs of operation, maintenance, repair, rehabilitation and replacement or recreation facilities.

**Operations during fiscal year.** Contract 1B was initiated in June 2003 and will be completed in April 2004. HRTW Phase 2 Remediation initiated July 2003 and will be complete January 2004. Fiscal year expenditure totaled \$11,423,247

**Historical summary.** The project was authorized by the Flood Control Act of 1965 for flood control and recreation and was modified by the Flood Control Act of 1976 to include modifications to Napa Creek. The project was placed in inactive status in 1978. Following severe flooding in February 1986, the sponsor requested reactivation of the project. Funds to resume pre-construction engineering and design (PED) were appropriated in fiscal year 1989. A revised Final SGDM was completed in October 1998 and approved in May 1999. The ROD for the revised SEIS/EIR was issued in June 1999. The PED phase of the project was completed in fiscal year 2000 at a total cost of \$15,587,000. Project was approved as new start construction for fiscal year 2000. Construction Contract 1A, estimated at \$2,550,000, was completed in October 2000. Demolition contract was completed in October 2002 and Phase 1 HTRW Remediation was completed in December 2002. Planning, engineering and design, construction management and non-Federal lands certification efforts continue.

## 24. PAJARO RIVER, CA

**Location.** In the Uvas-Carnadero and Llagas Creeks watersheds of the upper Pajaro River Basin in south Santa Clara County in vicinity of the city of Gilroy about 75 miles south of San Francisco, CA.

**Existing project.** See Annual Report for 1996, pg. 35-15.

**Local cooperation.** Fully complied with. Local Cooperation Agreement (LCA) for flood control was executed with the Santa Clara Valley Water District on June 25, 1987, and LCA for recreation was executed with the City of Gilroy on July 27, 1987.

**Operations and results during fiscal year.** The project is fiscally completed.

**Historical summary.** Responsibility for remaining portions of advance engineering and design, plans and specifications, and construction was transferred to Sacramento District in April 1982. Construction

began in October 1987. Construction for the first contract (levee work and bike path upstream of Thomas Road Bridge), second contract (levee work and hiking trails), and third and final contract (landscaping) has been transferred to local interests for operation and maintenance. Total reimbursement of \$5,583,369 has been made to the local sponsor.

## 25. PINE FLAT LAKE AND KINGS RIVER, CA

**Location.** Reservoir is on Kings River, about 25 miles east of Fresno, CA, and channel improvements are on Kings River downstream from Lemoore weir, about 25 miles south of Fresno. (See Geological Survey quadrangles of area.) Project also includes 2,500 acres of Forest Service recreation land near Pine Flat Lake.

**Existing project.** Improvement is a unit in comprehensive plan for flood control and other related purposes for Sacramento-San Joaquin Basins. Project consists of a 429-foot high concrete gravity dam, including a gated overflow section with a maximum discharge capacity of 391,000 cubic feet per second, creating a reservoir with gross storage capacity of 1 million acre-feet, for flood control, irrigation, and related purposes. Outlet provisions for future power development are included in dam, but Federal construction of power-generating facilities is not authorized. Improvement also includes levee and channel work on Kings River and its tributaries on valley floor about 25 miles south of Fresno. Channel improvement work will enlarge channel capacities and regulate flows in lower branches of the Kings River. There are nine public-use and recreation areas: One maintained by the Corps, four by the Forest Service, three jointly by the Corps and concession, and one by Fresno County. Also, five boat access-only areas are maintained by the Corps on the south side of the reservoir. Project cost is \$42,072,330, of which \$41,502,330 is Federal (including \$13,700 for basic recreation facilities) and \$570,000 non-Federal for rights-of-way for downstream channel improvements. For future non-Federal reimbursement, see Local cooperation paragraph. Federal cost of recreation facilities for Pine Flat Lake, funded from Code 710 appropriations is \$1,595,100 exclusive of recreation facilities previously provided at a cost of \$13,700. In addition, Federal cost of recreation facilities for Pine Flat Lake, funded from Public Works Acceleration Executive

Act of 1962 appropriations, was \$239,235 (July 1963). Operation and maintenance of dam and reservoir is Federal responsibility. Existing project was adopted by 1944 Flood Control Act (H. Doc. 630, 76th Cong., 3d sess., contains latest published map).

**Local cooperation.** Local interests must reimburse the Federal Government for first costs allocated to irrigation functions of reservoir portion of project in accordance with reclamation law. Under provision of War Department Civil Appropriations Act of 1947, the Secretary of War, with concurrence of the Secretary of the Interior, determined allocation of cost to irrigation should be set at an amount not to exceed \$14,250,000. In addition, local interests must pay 37.4 percent of annual maintenance, operation, and replacement costs of dam and reservoir allocated to irrigation function. Repayment contracts between the Bureau of Reclamation and the local water users for the irrigation use of the reservoir were executed December 23, 1963. The Bureau is administering the contracts in accordance with reclamation law as amended by the Reclamation Reform Act of October 12, 1982. That act generally exempts the limitations under the early reclamation laws as being applicable to projects constructed by the Corps with two exceptions; however, all existing contracts to share construction and maintenance costs remain in effect. Prior to execution of the final contracts, the Bureau provided conservation water to local interests under an interim contract. Irrigation interests paid \$15,013,721 for irrigation services through December 31, 2002. With respect to the downstream channel improvements, sec. 3, Flood Control Act of June 22, 1936, applies. King River Conservation District represents local interests; assurances were accepted November 20, 1959. Local interests have furnished all requirements for construction rights-of-way for construction of channel improvements required to date. Three concessionaires each at Lakeridge Marina (Deer Creek), Pine Flat Marina and Trimmer Marina provided public-use facilities in accordance with lease agreements with the Secretary of the Army. Estimated cost to date of facilities installed by these concessionaires is \$1,727,000. Fresno County developed public-use facilities on an 85-acre tract immediately downstream from dam for picnicking, camping, swimming, and playground activities, at an estimated cost of \$476,000 under provisions of a license agreement. The U.S. Forest Service developed and operates a picnic area at the upper end of reservoir. Cost of site development is about \$37,500. Installation of a hydroelectric power

plant, located at the downstream toe of the Corps Pine Flat Dam, was completed in January 1984 by Kings River Conservation District. Project consists of an outdoor-type powerhouse containing three generating units with capacities of 55 megawatts each for a total of 165 megawatts. Conservation District would make use of the three existing 13.5-foot diameter penstocks that were installed in Pine Flat Dam when constructed in 1954.

**Licenses.** License No. 1988, effective April 1, 1955, was issued by Federal Power Commission to Pacific Gas and Electric Co. for hydroelectric power development of North Fork Kings River by the company upstream from the Pine Flat reservoir. Under interim Contract No. DA-04-167-eng-1182 with the Department of the Army, Pacific Gas and Electric Co. paid for storage of power water in the Pine Flat reservoir May 15, 1954, through March 31, 1955. Current Contract No. DA-04-167-eng-1328 with the Department of the Army provides for storage of power water at the rate of 0.1375 per acre-foot; the contract covers April 1, 1955, through March 31, 2005. By an agreement of January 1972, supplementing the December 1954 contract, Pacific Gas and Electric Co. transferred ownership of most of its Kings River system water to the Kings River Water Association. Accordingly, no further significant storage service to Pacific Gas and Electric Co. by the reservoir at Pine Flat is anticipated. Total payment under these contracts through June 30, 1972, (last year of payment), amounts to \$2,478,798; these funds were paid to Sacramento District and deposited for return to the Treasury. License No. 2741, effective September 25, 1979, was issued by the Federal Energy Regulatory Commission to the Kings River Conservation District for hydropower development at the downstream toe of the Corps Pine Flat Dam. Payment to the Department of the Army for construction and installation of the penstocks in the amount of \$1,044,685 was made to Sacramento District and deposited for return to the Treasury in November 1985.

**Operations and results during fiscal year.** New work, regular funds: None. Code 710 funds: None. Maintenance: Maintenance and operation activities continued. Structures were maintained in serviceable condition. Runoff of Kings River above Pine Flat Dam was above normal for the year. Maximum storage of 804,790 acre-feet occurred on June 9, 2003. Maximum hourly inflow to the reservoir was 20,629

cubic feet per second on November 8, 2002, and maximum outflow of 7,251 cubic feet per second occurred on June 5, 2003. During the year, 1,303,233 acre-feet was released for irrigation and spreading. There was no release for flood control.

**Historical summary.** Construction began in April 1947 and project, including channel improvement, was completed in September 1977. Main dam was initiated in January 1950, completed in June 1954, and has been operating since February 1954 to provide flood protection for which it was designed. Total of 35.2 miles of new and reconstructed levees and 13.2 miles of channel clearing have been transferred to the Kings River Conservation District for maintenance. Recreation facilities for various recreation areas under Code 710 appropriation are complete. Completed preliminary design and cost estimates for Pine Flat fish barrier were reviewed by the State, but the State was unable to provide necessary assurances of local cooperation. Dam safety assurance studies were initiated in FY 1982. A cultural resources survey was completed in FY 1984. On May 15, 1991, Pine Flat Lake acquired additional acreage as part of a memorandum of understanding (MOU) between the Secretary of the Army and Secretary of Agriculture (Forest Service). The Corps exchanged Isabella Lake and the 16,000 acres around that lake currently being used for park and recreational purposes for approximately 2,500 acres of Forest Service recreation land near Pine Flat Lake.

## 26. RAMS – RESTORATION OF ABANDONED MINES

**Location.** Presently, there are 68 funded sites and 88 potential sites located in eleven states in the Western Region. The states are Nevada, California, Colorado, Montana, New Mexico, Arizona, Minnesota, Alaska, Utah, Hawaii and Idaho.

**Existing Project.** RAMS was authorized in Sec. 560 of WRDA 1999 to provide assistance to non-Fed and nonprofit entities to develop, manage, and maintain a database of conventional and innovative, cost effective technologies for reclamation of abandoned & inactive non-coal mine sites. Consolidated Appropriations Act, 2001 (P.L. 106-554) provided \$5m of previously appropriated funds may be used for this activity. Of the 68 funded sites, there are 25 in Nevada, 12 in California, 9 in Colorado, 7 in Montana, 5 in New Mexico, 3 in Arizona, and 2 in

Minnesota and Idaho; and Alaska, Utah, and Hawaii have one site each. Technical, planning and design assistance have been scoped within available funds. Funds are also being used to continue program management and support the technology database. A model cost sharing agreement was submitted to ASACW and HQUSACE and is expected to be approved in November 2002 for projects with non-Federal partners.

**Local Cooperation.** Authorized in Section 560 of WRDA 99 for technical, planning and design assistance; authorized \$5m to be appropriated for this purpose; cost-sharing 50% Fed/50% non-Fed.

**Historical Summary.** In Dec 98 a MOU was signed w/NWD, POD, SPD. PMP signed Aug 01 w/SPD & NWD. Previously appropriated FY 01 funds of \$2.810M reprogrammed to initiate program management & site-specific planning & design assistance for prioritized sites. FY 03 funds of \$1.248M was available for the program.

## 27. REDBANK AND FANCHER CREEKS, CA

**Location.** Northeast and adjacent to the Fresno-Clovis Metropolitan Area in Fresno County about 170 miles southeast of Sacramento, CA.

**Existing project.** Provides for flood control detention basins on Redbank Creek, Pup Creek, and Alluvial Drain; construction of a dam 45.5 feet high to create a reservoir with gross capacity of 10,300 acre-feet for flood control on Fancher Creek; and enlargement of Big Dry Creek project to provide increased flood protection and recreational development. Since the local sponsor does not support recreational development at this time, the recreation feature of the project is considered to be inactive. The Authorization Act states "measures determined appropriate by the Secretary of the Army to minimize benefits to groundwater recharge" shall be included in the project. Estimated cost (October 1997) for existing project is \$73,710,000 (includes an allowance for estimated inflation through the construction period), of which \$47,460,000 is Federal and \$26,250,000 is non-Federal (which includes \$3,670,000 cash contribution). For future non-Federal reimbursement, see Local cooperation paragraph. Existing project was adopted by Sec. 401, Water Resources Development Act of 1986, Public Law

99-662, November 17, 1986. (HD 98-147, 98th Cong., 2d sess., contains published map.)

**Local cooperation.** Local interests are required to provide lands, easements, rights-of-way, and dredged material disposal areas; modify or relocate buildings, utilities, roads, bridges (except railroad bridges) and other facilities where necessary in construction of the project; pay 5 percent of cost allocated to flood control to bring total non-Federal share of flood control costs to 25 percent, of which \$3,680,000 is cash contribution, and bear all costs of operation, maintenance and replacement of flood control facilities. Local interests have agreed to make all required payments concurrently with project construction.

**Operations and results during fiscal year.** Engineering activities, real estate crediting, and project auditing were continued.

**Historical summary.** Local Cooperation Agreement was executed on August 1, 1987. Project construction was begun in September 1987 with initiation of archaeological work on Cultural Resources Preservation. Construction contract for Dry Creek Crossing was completed and transferred to local interests for operation and maintenance on January 10, 1989. Construction at Redbank Creek Detention Basin was completed and transferred to local interests for operation and maintenance on August 23, 1990. Construction contract for Fancher Creek Dam awarded May 23, 1990, was completed and transferred to local interests for operation and maintenance on March 13, 1992. Construction contract for Big Dry Dam, Pup and Alluvial detention basins was awarded March 18, 1992. Big Dry Creek Dam and Pup Creek Detention Basin were transferred to local interests on June 22, 1994. Last piece of completed work, Alluvial Drain Detention Basin, was transferred to local interests for maintenance and operation on July 18, 1994.

## **28. RUSSIAN RIVER BASIN, CA**

Reported on by the San Francisco District.

## **29. RURAL NEVADA, SECTION 595, NV**

**Location.**

**Existing project.** WRDA 1999, Section 595 authority provides for design and construction assistance for water supply wastewater treatment, environmental restoration and surface water protection. Projects are to be cost shared 75% Federal and 25% non-Federal and the total program is limited to \$100 million. The Federal share may be in the form of grants or reimbursement. Two SPK projects may be in the form of grants or reimbursements. Two SPK projects were funded for FY 01 Lawton-Verdi and Silver Springs. In FY 02, funding was provided to continue these two projects and added projects at Carlin, NV and McGill, NV. Lawton-Verdi and Silver Springs are wastewater projects to reduce septic systems and improve water quality. Carlin is a waterline and McGill is replacing the failing existing sewer collection system.

## **30. SACRAMENTO RIVER AND TRIBUTARIES, CA, FROM COLLINSVILLE TO SHASTA DAM**

**Location.** Rises in Trinity Mountains in north-central California, flows generally southerly about 374 miles and empties into Suisun Bay, an arm of San Francisco Bay at Collinsville, CA. Works covered by this improvement are on Sacramento River and tributaries from Collinsville to Shasta Dam, about mile 312. Drainage area above Rio Vista is 26,500 square miles (See Geological Survey quadrangles of area for Sacramento River and Upper Butte Basin; Flournoy and Fruto quadrangles for Black Butte Lake; and Tuscan Buttes, Tehama, Redding, and Hooker quadrangles for Table Mountain Lake.)

**Existing project.** Improvement of Sacramento River and tributaries, from Collinsville to Shasta Dam was authorized as a unit of a comprehensive plan for flood control and other related purposes in Sacramento River Basin. (a) Sacramento River and major and minor tributaries, for flood control purposes: Enlargement of existing levees on Sacramento River between vicinity of Moulton weir and Ord Bend; construction of new levees from present levee terminus to vicinity of Chico Landing; construction of a weir near Chico Landing, extension of Moulton weir, and construction of a bypass through Upper Butte Basin; construction of new levees in Lower Butte Basin; enlargement of existing levees in Sutter, Tisdale, Sacramento, and Yolo Bypasses; and levee construction and/or channel enlargement on

following minor tributaries of Sacramento River: Antelope Creek; Chico and Mud Creeks and Sandy Gulch; Butte and Little Chico Creeks; Cherokee Canal; Elder Creek; Deer Creek (Tehama County); Thomes Creek; and Willow Creek. Improvement provides for about 155 miles of channel improvement and about 294 miles of levees with an average height of 12 feet and a freeboard of 3 feet. Improvement also provides for revetment as required for protection of bypass levee slopes against erosion. Total first cost for project is \$18,300,000 (October 1988), of which \$11,900,000 is Federal, and \$6,400,000 non-Federal for lands and damages, including relocations. (See table 35-N on project units classified and excluded from cost estimate.) (b) Sacramento River, Chico Landing to Red Bluff, CA: An extension of the existing Sacramento River Flood Control project which provides for construction of bank protection works and minor channel improvements as required on Sacramento River between Chico Landing and Red Bluff for flood control purposes. Estimated first cost (October 1987) for project work in Tehama, Butte, and Glenn Counties is \$31,000,000, of which \$25,700,000 is Federal cost and \$5,300,000 non-Federal cost for lands and damages including relocations and cash contribution of \$3,435,000. (c) Sacramento River, CA, Bank Protection Project: Includes initial phase covering 430,000 lineal feet of bank protection and a second phase covering 405,000 lineal feet of bank protection under a long range program of bank protection, erosion control works, and setback levees at critical locations within limits of authorized or existing levees included in the Sacramento River Flood Control project to protect integrity of levee system for flood control purposes. Total estimated (October 1997) first cost for project is \$249,400,000, (includes an allowance for estimated inflation through the construction period) of which \$179,900,000 is Federal and \$69,500,000 non-Federal comprised of lands and damages including relocations \$26,671,000 and required cash contribution \$42,829,000 toward first cost. Total estimated cost for recreation facilities, \$2,874,000 (includes both Federal and non-Federal). Construction in (a), (b), and (c) above supplements program of levee improvements as accomplished pursuant to 1917 Flood Control Act, as amended by subsequent acts, including 1941 Flood Control Act, and which are reported on page 35-3A under Sacramento River, CA, flood control. (d) Authorization also provided for Black Butte Lake. For description of completed project see Annual Report for 1975. Federal first cost for project is \$14,508,820,

including \$475,507 for basic recreation facilities. For future non-Federal reimbursement, see Local cooperation paragraph. Federal cost for recreation facilities funded from Code 710 appropriations is \$1,000,162. A concessionaire at Black Butte Marina provided public use facilities in accordance with lease agreement with the Secretary of the Army at an estimated cost to date of \$87,000. (e) Authorization also provided for construction of Table Mountain (Iron Canyon) project, an earthfill dam on Sacramento River about 3 miles north of Red Bluff, CA. For details, see Annual Report for 1978.

**Local cooperation.** (a) Sacramento River and major and minor tributaries: Sec. 3, Flood Control Act of June 22, 1936, applies. Fully complied with for all work completed or under contract, and local interests indicated they will be able to fulfill requirements for remaining work as scheduled. Levee construction (107 miles) total requirement for the "active" project has been completed, transferred to, and accepted by the State. (b) Sacramento River, Chico Landing to Red Bluff: Sec. 3, Flood Control Act of June 22, 1936, applies; local interests must also assume responsibility for flood plain zoning. Fully complied with for portions completed in Tehama, Butte, and Glenn Counties; completed work, bank protection at 36 sites, was transferred to and accepted by the State. (c) Sacramento River Bank Protection Project: Sec. 3, Flood Control Act of June 22, 1936, applies. Local interests must also contribute an amount in cash that, when added to costs of lands, easements, rights-of-way and utility modifications, equals one-third of cost of each unit of remedial work; this contribution is estimated (October 2000) at \$27,740,000. Water Resources Development Act of 1986 applies. Local interests must also contribute an amount in cash, that when added to the cost of lands easement, rights-of-way and utility modifications, equal one-quarter of each unit of remedial work; this contribution is estimated (October 2000) at \$40,970,000. First phase mitigation equals thirty-seven percent for acquisition of land and establishment and maintenance of fish and wildlife habitat, this contribution is estimated (October 2000) at \$790,000. Local interests fully complied with requirements for all work completed or under contract, and indicated they will be able to fulfill requirements for remaining work as scheduled. In addition, for reaches where local interests request bank stabilization in lieu of more feasible levee setbacks, local interests will contribute costs over and

above costs of setbacks, and provide local contribution. Completed units transferred to and accepted by the State. (d) Black Butte Lake: None required for construction. Local interests must pay the portion of first cost and annual operation and maintenance costs allocated to the conservation functions of the project; these costs are estimated at 39.9 percent of first cost and 40.2 percent of annual costs. From March 2, 1960, to October 22, 1970, contract between the Bureau of Reclamation and the State of California provided for repayment of irrigation storage costs; Bureau administered contract in accordance with reclamation law. Local interests paid a total of \$77,205 for irrigation services during this period. Public Law 502, 91st Cong., 2d sess., October 23, 1970, provided that Black Butte project be financially integrated with the Central Valley project, coordinated operationally with other Central Valley project storage units by the Bureau under the Secretary of the Interior, and that dam and reservoir at Black Butte be physically operated and maintained by the Corps in a manner compatible with recreational use of the reservoir.

**Operations and results during fiscal year.** New work: (a) Sacramento River and major and minor tributaries None. (b) Sacramento River Bank Protection will complete construction of 40E River mile 149 in November 2002. Design and negotiations continue. Fiscal Year costs total \$3,596,270. (c) Sacramento River, Chico Landing to Red Bluff. None. (d) Black Butte Lake, regular funds: None. Code 710 funds: None. Maintenance: Maintenance and operation activities continued. Structures were maintained in serviceable condition. Runoff above Black Butte Dam was above normal for the year. Maximum storage of 132,501 acre-feet occurred May 15, 2003. Maximum hourly inflow to Black Butte reservoir was 19,699 cubic feet per second on December 16, 2002, and maximum outflow of 7,699 cubic feet per second occurred on January 1, 2003. During the year, 241,996 acre-feet was released for flood control and 107,227 acre-feet was released for irrigation and other purposes. (e) Table Mountain (Iron Canyon) Lake: None.

**Historical summary.** (a) Sacramento River and major and minor tributaries (active portions): Construction was initiated in May 1949 on Deer Creek and Butte Creek units; Cherokee Canal, Elder Creek, Chico and Mud Creeks, and Sandy Gulch units have been completed. Active portion of this improvement

is about 99 percent complete. Work remaining is bypass levee revetment as required, which will accomplish under Sacramento River Bank Protection project. (b) Sacramento River Bank Protection Project: First phase (pre-Separable Element 38B and second phase (SE 38B-SE42) have 767,000 linear feet complete. SE 40,41,42 and 43 have 68,000 linear feet remaining. LCAs were executed for SE 41 in August 1988, for SE38B, 40 and 42 in December 1988 and for first phase mitigation in June 1990. Contract LAR 1A1, Site 3 was awarded in August 1996 and completed in December 1996. Contract LAR 1A2, Site 3 (River Park) was awarded in June 1997 and completed in February 1998. Steamboat Slough contract was awarded in September 1997 and completed in November 1997. Contract LAR 1A3, Site (River Park) was awarded in November 1997 and completed in May 1999. Contract for LAR1B, Sites 1, 2, and 4 was awarded July 1998 and completed in December 1999. Contract LAR 2, Site 5, Phase 1 was awarded in January 1999 and completed in March 1999. Contract LAR 2, Site 5, Phase 2 was awarded on August and completed in December 1999. Contract 41D, RD108 was awarded August 2000 and completed in December 2001. Contract 40E, River mile 149 was awarded September 2001 and will be completed November 2002. A total of 357,800 linear feet of erosion protection for Phase II has been installed. Overall project is about 94 percent complete. (c) Sacramento River, Chico Landing to Red Bluff: Active portion of project, bank protection in Tehama County, was initiated in June 1963 and completed in March 1964. Project was reopened in June 1968 to place additional necessary bank protection. Work at 36 sites was completed in Tehama, Butte, and Glenn Counties as of September 1985 and transferred to State for maintenance. Bank protection on Sacramento River, Tehama County one site, mile 215, (Unit 5), was completed November 1982, two sites, mile 209.5 and mile 217.5, (Unit 6), were completed in November 1983, and four sites, 241.0, 237.9, 237.7, and 237.5 (Unit 7) were completed in February 1985. (d) Black Butte Lake: Construction began in March 1960 and project is complete. Final land acquisition was completed in December 1966. Construction of main dam was initiated in June 1960 and completed in December 1963. Dam has been operating since November 1962 to provide the flood protection for which it was designed. Final cost allocation approved May 3, 1977. Dam safety assurance studies were initiated in FY 1980 and completed in FY 1986. Piezometer

installation and slope for protection at dam were completed in FY 1983. A cultural resources survey was completed in FY 1984. (e) Table Mountain (Iron Canyon) Lake: Project unit deauthorized as of August 5, 1977.

### 31. SAN LORENZO, CA

**Location.** Project is located within the city limits of Santa Cruz, CA, in Santa Cruz County, about 70 miles south of city of San Francisco and includes the lower 2.5 miles of San Lorenzo River which terminates at the Pacific Ocean.

**Existing Project.** Flood control features of the authorized project consist of construction of 13,000 l.f. of levee embankment raise or floodwalls on top of various portions of the existing project levees on both sides of San Lorenzo River from the Southern Pacific Railroad bridge to Highway 1. Habitat restoration measures include re-vegetating the land-side slopes of the levees. The maximum flood of record occurred in 1955 which inundated 410 acres and caused damages of approximately \$7.6 million. Project was authorized by the Water Resources Development Act of 1996 for flood control and habitat restoration purposes. Streambank erosion control was added to the project under the Water Resources Development Act of 1999. Cost estimate (October 2003) is \$28,900,000 (includes an allowance for estimated inflation through the construction period), of which \$21,060,000 is Federal cost and \$7,840,000 is non-Federal cost.

**Local cooperation.** Local interests are required to provide lands, easements, rights-of-way, and dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary in construction of project; pay 11 percent of cost allocated to flood control to bring the total non-Federal share of costs to 25 percent, as determined under Section 103(m) of the Water Resources Development Act of 1986 to reflect the non-Federal sponsor's ability to pay as reduced for credit allowed based on prior work (\$534,000 authorized under Section 215 of the Flood Control Act of 1968); pay 9 percent of the costs allocated to fish and wildlife habitat restoration to bring the total non-Federal share of habitat restoration costs to 25 percent, as determined under Section 103 (m) of the Water Resources Development Act of 1986 to reflect the non-Federal sponsor's ability to pay as reduced for credit allowed based on prior work (\$32,000

authorized under Section 215 of the Flood Control Act of 1968), and bear all costs of operations, maintenance, repair, rehabilitation, and replacement of fish and wildlife facilities. Pay 35 percent of the costs allocated to stream bank erosion control, and bear all costs of operation, maintenance, repair, rehabilitation and replacement of stream bank erosion control features of the project, and bear all costs of operation, maintenance, repair, rehabilitation, and replacement. Local sponsor, City of Santa Cruz, expressed their continued support for project by letter dated October 8, 1997. The Project Cooperation Agreement (PCA) for flood control was executed October 15, 1998. Streambank erosion control requires an amendment to the PCA. A limited Re-evaluation Report will be completed October 2003. The amendment to the PCA scheduled for execution in March 2004.

**Operations and results during fiscal year.** Energy and Water Development Appropriations Act, 1997 provided initial construction funds of \$200,000. Engineering and design continued, including revisions of plans and specifications to incorporate habitat restoration features into project. Construction General funds were used for fiscal year costs of \$1,673,200.

**Historical summary.** A flood control project, consisting of levee and channel improvements, was completed in 1959 by the Corps of Engineers. The project was to provide a standard project flood level of protection (about a 200-year event). Since that time, excessive sediment deposition in the streambed has reduced the flood carrying capacity of the existing project. Sediment accumulation and the resultant peak flows during a flood event in January 1982 caused the river to flow near design capacity, even though the storm had a recurrence level of only approximately 25-years. As a result of the flood threat, the City of Santa Cruz and the Corps of Engineers initiated a feasibility study of the San Lorenzo River with the signing of a final Feasibility Cost Sharing Agreement (FCSA) on August 18, 1989. Chief's Report was signed June 30, 1994. Preconstruction engineering and design phase was initiated in March 1994 and completed at a cost of \$934,000. Streambank erosion control requires an amendment to the PCA. A Limited Re-evaluation Report is being prepared and is scheduled for completion in FY 2003.



### 32. SOUTH SACRAMENTO COUNTY STREAMS

**Location.** The project is located in the southeastern portion of Sacramento County, CA. The project consists of the Morrison Creek Stream Group Basin, approximately 180 square miles in size.

**Existing Project.** The flood control features of the project consist of raising and extending the ring levee around the Sacramento Regional Water Treatment Plant; raising the Beach Stone Lakes and Morrison Creek levees; installing floodwalls, using sheet pile, on Morrison, Elder, Florin and Unionhouse Creeks, and retrofitting bridges to lower the risk of failure due to flooding. Recreation features include a bicycle and pedestrian trail. Restoration of ecosystem at five sites would increase water quality to open water environments and enhance and expand wetlands, riparian vegetation, grasslands, and woodlands. Significant flooding occurred in 1952, 1955, 1962, 1963, 1967, 1969, 1973, 1982, 1995, and 1997. In January 1995, intense rainfall resulted in record flows on Morrison Creek near or exceeding the 1 in 100 annual event. Significant development has occurred in the upper basin, which is increasing the runoff and potential for flooding. The levees currently provide less than a 100-year level of protection. The selected plan would provide a high level of protection (1 in 500 annual event) to all areas of the basin. Cost estimate (October 2003) is \$73,400,000 (includes an allowance for estimated inflation through the construction period), of which \$47,600,000 is Federal cost and \$25,800,000 is non-Federal cost.

**Local Cooperation.** Local interests are required to provide lands, easements, rights-of-way, and borrow, excavated or dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary for the construction of the project; pay 20 percent of the costs allocated to flood control and environmental restoration to bring the total non-Federal share to 35 percent for flood control and environmental restoration as reduced for credit allowed based on prior work (\$5.9m as authorized under Section 104 of WRDA 86), and bear all costs of operation, maintenance, repair, rehabilitation and replacement of recreation facilities.

**Operations and results during fiscal year.** Engineering and design continued, including revisions

to the hydraulic modeling. The Project Cooperation Agreement for environmental restoration was signed September 18, 2003. Expect to award construction contract December 2003.

**Historical Summary.** Construction General funds were appropriated in FY 2002 by Congressional add. PED agreement was executed May 1998. The Chief's Report was signed October 1998.

### 33. STOCKTON METROPOLITAN AREA REIMBURSEMENT, CA

**Location.** The primary project area is in the city of Stockton, California, approximately 40 miles south of Sacramento and 85 miles east of San Francisco. The approximately 200 square mile area extends from Bear Creek on the north, Mormon Slough on the south, the confluence with the Sacramento/San Joaquin Delta on the west and Jack Tone Road on the east.

**Existing Project.** Project will reimburse the sponsor for locally constructed improvements made to the existing levee system along the Bear Creek System and the Calaveras River System. After flooding in northern CA in 1986, FEMA initiated a flood zone restudy of the Stockton area. Draft Flood Insurance Rate Maps were released delineating a larger 100-year flood plain than previously recorded, affecting approximately 251,000 residents. Section 211 crediting report concluded that the San Joaquin Area Flood Control Agency's improvements to the Lower Mosher Slough area, with a non-Federal cost of \$4.3 million, are not eligible for reimbursement. In addition, improvements to approximately 12,000 feet of the Upper Calaveras River Levee System with a non-Federal cost of \$3.28 million, 3,300 feet of Upper Mosher Creek with a non-Federal cost of \$812,000 and permitting costs of \$773,000 were determined to be ineligible for reimbursement. These areas did not meet the Corps of Engineers minimum flow criteria for participation in urban flood control projects.

**Local Cooperation.** San Joaquin Area Flood Control Agency (SJAFCA)

**Operations and Results During Fiscal Year.** FY 2003 reimbursement \$3M for a total of \$13M.

**Historical Summary.** SJAFCA, the local sponsor, completed the construction of a flood control project

in March 1999 at 100% local cost. SJAFCA, under authority of WRDA of 1996, Sec 211 (f), entered into a FCSA w/Corps to study the credit/reimbursement of local project costs. Draft 211 report completed Nov 99; HQ reviewed and sent to ASA (CW) Sep 00; ASA sent to OMB Jan 01; OMB sent to ASA Feb 01. ASA approved the report Jul 01. MOA was signed 2 Mar 02. The first reimbursement of \$7M was made 21 Mar 02 and a second of \$3M was made 23 Sep 02 for a total of \$10M.

### **34. STOCKTON, FARMINGTON RECHARGE, CA**

**Location.** The project area includes Stockton metropolitan & surrounding rural areas.

**Existing Project.** Groundwater is San Joaquin County's primary water source. Levels have dropped as much as 100 ft. the past 40 years & saline intrusion from the San Joaquin/Sacramento Delta worsens. A significant threat to the San Joaquin County economy exists if saline intrusion continues. Problems involve groundwater overdraft & resulting saline intrusion in the San Joaquin County area. The Corps/SEWD technical investigation concluded the aquifer is overdrafted and that a saline front is moving toward the aquifer. Field flooding within the recharge corridor was found to be the most cost effective method to recharge and reverse saline intrusion.

**Local Cooperation.** Stockton East Water District (SEWD)

#### **Operations and Results During Fiscal Year.**

Construction General funds were added in FY 2003. Contracted with Engineering firm in June 2003 to develop site investigation manual. Developed and tested one recharge site in August 2003 monitoring is ongoing.

**Historical Summary.** Section 502 of the WRDA 1999 (amended Section 219 of WRDA 1992) authorized construction of a ground water recharge and conjunctive use project WRDA 1999 Section 502, Environmental Infrastructure, authorized the Corps to provide technical, planning, design and construction assistance to SEWD associated with groundwater recharge and conjunctive use projects in the SEWD, CA. The conjunctive use study completed in Dec 97 concluded that modifications to Farmington Dam could not provide sufficient replacement water

supplies to fully meet the groundwater overdraft problem. In addition, it did not appear to be in the Federal interest at the time, to transfer Farmington Dam to either SEWD or another local entity. With these findings, a feasibility study was initiated to investigate multi-purpose groundwater recharge and wetland habitat features and resources.

Construction funds were added in FY 02 to execute a PCA in June 2002, implement a groundwater recharge site selection process and initiate construction.

### **35. UPPER JORDAN RIVER, UT**

**Location.** Project is located in Salt Lake County, Utah just south of Salt Lake City corporate limit.

**Existing Project.** The project includes construction of a flood control diversion and sediment control structure on Mill Creek, a 1.4 mile underground conduit from the diversion structure to a detention basin, and construction of a 100 acre foot Hillview Detention Basin. The project will divert flood flows from Mill Creek to the detention basin and ultimately into Big Cottonwood Creek. The project will provide 100 year flood protection on Mill Creek above State Street.

**Local Cooperation.** Local interests are required to provide lands, easements, rights of way, and borrow and excavated or dredged material disposal areas. Modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary in the construction of the project. Pay 6 percent of the costs allocated to flood control and bear all costs of operation, maintenance, repair, rehabilitation and replacement of flood control facilities. The non-Federal sponsor has also agreed to make all required payments concurrently with project construction. Salt Lake County will act as the local sponsor for the project. A Project Cooperation Agreement is pending completion of a limited reevaluation report (LRR) and required funding.

**Operations and results during fiscal year.** PED was completed at a cost of \$1,576,000. At the request of Salt Lake County, the design is being reevaluated to address potential downsizing of the diversion structure and other project features. Results of the reevaluation will be presented in the LRR.

**Historical Summary.** A feasibility report was completed in 1987 and PED was completed in December 1994. Funds were added in FY 1997 to initiate construction. There has been a long history of flooding which is most commonly associated with snowmelt. The most recent flooding occurred in 1982, 1983, and 1984. A General Design Memorandum (GDM) was approved in December 1994. A project Authorization Change (PAC) report was submitted in January 1996 to obtain Congressional reauthorization on a Section 902 (WRDA 86) new cost limit. The project was reauthorized in WRDA 96.

### 36. WALNUT CREEK, CA

**Location.** Project is on Walnut Creek and lower reaches of its principal tributaries, Pacheco, Grayson, San Ramon, Las Trampas, Galindo, and Pine Creeks in Contra Costa County, CA. Improvement will extend from Suisun Bay to head of project about 1 mile above southern limits of city of Walnut Creek. City of Walnut Creek is about 10 miles south of Suisun Bay. (See Geological Survey quadrangles for area.)

**Existing project.** Comprises extension of existing levees, construction of new levees and concrete channels, channel rectification and enlargement, and utilization of improvements constructed or planned by local interests. Improvements include about 18 miles of channel improvement, two reinforced-concrete drop structures, two stilling basins, and 10 miles of levees. Cost estimate (October 2003) is \$99,285,000 (includes an allowance for estimated inflation through the construction period), of which \$73,027,000 is Federal cost and \$26,285,000 is non-Federal cost (includes \$19,360,000 for lands and damages and relocations except railroad facilities, and \$5,840,000 required cash contribution for land enhancement benefits provided by the project). Local interests have expended about \$3 million for flood control in the project area during the period 1955-1965, including the concrete conduits constructed through the city of Walnut Creek at an estimated cost of \$1,000,000 considered a pre-project condition to be incorporated in the Corps project. In addition, local developers have made channel improvements for Upper Pine Creek valued at \$5,050,000. The cost thereof is not included in above costs of local cooperation. Improvement adopted by 1960 Flood Control Act (H. Doc. 76, 86th Cong., 1st sess., contains latest published map).

**Local cooperation.** Section 3, Flood Control Act of June 22, 1936, applies, except that relocation of railroad facilities is a Federal responsibility. In addition, local interests must make a cash contribution to the United States, in amount of 7.4 percent of cost of construction for land enhancement benefits provided by project. Cash contribution is estimated (October 1992) at \$5,840,000. Local interests are represented by Contra Costa County Flood Control and Water Conservation District; formal assurances, including evidence of financial and legal ability to fulfill requirement for the cash contribution, were accepted by the Sacramento District Engineer on November 15, 1963. The Flood Control District furnished all rights-of-way required to date and indicated that it will furnish all requirements as needed for future construction. The Flood Control District arranged for highway bridge modifications and utility relocations before start of work by the Corps contractor. Payment of required contributed funds will be made in installments in amounts equal to 7.4 percent of the estimated construction expenditure for each fiscal year.

**Operations and results during fiscal year.** Construction associated with repair of the San Ramon Bypass Channel Cover was completed in November 2001 representing completion of scheduled construction. House Report 107-112 included request for a General Re-evaluation of the project to incorporate ecosystem restoration goals with existing flood damage reduction objectives. A Feasibility Cost Sharing Agreement was completed in June 2003 to initiate the study.

**Historical summary.** Construction was initiated June 1964; project is about 98 percent complete. Total of 17.7 miles of channel improvement, 9.2 miles of levee construction, part of channel improvement landscaping, Drop Structures No. 1 and 2 and construction under San Ramon Bypass Contract No. 1, Contract No. 2 and Contract No. 3 and Upper Pine Creek Channel contract have been transferred to local interests for operation and maintenance. Due to difficulties with Contract No. 1 part of the contract work was completed under Contract No. 1A with a different contractor. A contract for remedial work on San Ramon Bypass Contract No. 2 channel cover was completed in August 1993. The 9-acre mitigation contract was completed in June 1993. Work remaining consists of completion of erosion control mitigation (8-acre Construction responsibility was

transferred from San Francisco District on April 1, 1982.

### 37. WEST SACRAMENTO, CA

**Location.** Project is located in West Sacramento, Yolo County, in north-central California.

**Existing Project.** Project consists of raising 4.9 miles of levees up to 5.0 feet along the Sacramento and Yolo Bypasses; constructing 0.9 miles of slurry cut-off wall approximately 50 feet deep at the waterside toe along the east levee of the Yolo Bypass extending into the south levee of the Sacramento Bypass; constructing concrete wing walls with stop logs at the Union Pacific Railroad; constructing a concrete wing wall and flow cut-off wall on each side of Interstate 80; and developing approximately 40 acres of mitigation lands for riparian and upland habitat loss. Project was authorized by the Water Resources Development Act (WRDA) of 1992. Project was reauthorized by the Energy and Water Development Appropriations Act, 1999 (P.L. 105-245) Estimated cost (October 2003) is \$29,460,000 with a Federal cost of \$22,095,000 and a non-Federal cost of \$7,365,000 which includes a cash contribution of \$4,615,000.

**Local cooperation.** Local interests are required to provide lands, easements, rights-of-way, and dredged material disposal areas; modify or relocate utilities, roads, bridges (except railroad bridges), and other facilities where necessary in construction of project; pay 14 percent of cost allocated to flood control to bring the total non-Federal share of costs to 25 percent, and bear all costs of operation, maintenance, repair, rehabilitation, and replacement of flood control facilities. The non-Federal sponsor has also agreed to make all required payments concurrently with project construction. A Project Cooperation Agreement (PCA) with the local sponsor, the California State Reclamation Board, was executed in May 1996.

**Operations and results during fiscal year.** The ship channel mitigation contract was awarded for \$2.6 million. Fiscal year costs were \$1,867,215 (Federal) and \$318,333 (non-Federal contributed funds).

**Historical summary.** Funds were appropriated in FY 1992 to initiate preconstruction engineering and design (PED) for the combined American River Watershed and Sacramento Metropolitan studies. The

two projects were separated when WRDA 92 authorized the West Sacramento Project (Sacramento Metropolitan) independently of the American River Watershed Project. Funds to initiate construction for the West Sacramento Project were appropriated in FY 1995. Design Memorandum was approved in March 1996. PED was completed at a cost of \$1,847,000. First construction contract in the amount of \$5,217,225 was awarded June 19, 1998. Second construction contract was awarded September 30, 1999 and completed December 2001. First slump repair contract awarded September 2002 and completed November 2003. Second slump repair contract is scheduled to be awarded April 2004.

### 38. WILDCAT AND SAN PABLO CREEKS, CA

Reported on by the San Francisco District.

### 39. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Approved regulations for operation and maintenance of flood control works, part 208, title 33, Code of Federal Regulations, provide for inspection of completed projects transferred to local interests for operation and maintenance to determine status of project and insure compliance with regulations. During fiscal year, inspections were made of: Completed units of Fairfield Vicinity Streams; completed units of Sacramento River and major and minor tributaries; completed units of Sacramento River, Chico Landing to Red Bluff; completed units of Sacramento River flood control project, Kings River Channel Improvement (Pine Flat Lake project), and Walnut Creek project; American River levees; Merced County Stream group; Middle Creek (Lake County); Chester, North Fork Feather River; levee and channel improvements on Chowchilla River (Buchanan project) and Fresno River (Hidden project); Duck Creek diversion, Green Valley Creek, Littlejohn Creek, Mormon Slough, Bear Creek, Kern River-California Aqueduct Intertie, and North Fork, Pit River at Alturas, all in California; Truckee River, CA and NV; completed units of lower San Joaquin River and tributaries, CA; completed units of Red Bank and Fancher Creeks including Big Dry Creek Dam and diversion, and Fancher Dam and Redbank, Alluvial Drain and Pup Creek detention basins, CA; Reese River, Battle Mountain, NV; Sevier River,

Redmond and vicinity, Jordan River, Big Wash near Milford, and Kays Creek, all in Utah; various emergency flood control works under authority of Sec. 208, Flood Control Act of June 30, 1948, and September 3, 1954; Public Law 99, June 28, 1955, and antecedent legislation; and Sec. 14 of Flood Control Act of July 24, 1946. Maintenance inspections conducted indicate that existing agreements and regulations are being complied with on completed flood control works. Continuing effort is required to improve maintenance practices and active steps are being taken by responsible State and local agencies to achieve desired results. Local agencies were advised, as necessary, of measures required to maintain these projects in accordance with standards prescribed by regulations. Total cost of inspections for fiscal year was \$390,100.

#### **40. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION**

**Flood control activities pursuant to sec. 205, Public Law 858, 80th Congress, as amended (Preauthorization).**

Costs for preauthorization studies for fiscal year were \$689,536. See Table 35-P for list of studies.

**Aquatic Ecosystem Restoration activities pursuant to sec 206, Public Law 303,104<sup>th</sup> Congress.**

Cost for studies for fiscal year were \$2,458,209. See Table Q for list of studies.

**Emergency flood control activities-repair, flood fighting, and rescue work (Public Law 99, 84th Cong., and antecedent legislation).**

Federal cost for fiscal year was \$17,134,767. \$468,774 was for disaster preparedness and \$16,665,993 for emergency flood repairs.

**Emergency bank protection (Sec. 14, 1946 Flood Control Act, Public Law 526, 79th Cong.).**

Federal cost for fiscal year was \$1,917, \$0 was for emergency operations and \$1,917 for emergency streambank and shoreline protection.

**Snagging and clearing navigable streams and tributaries in interest of flood control (Sec. 208,**

**1954 Flood Control Act, Public Law 780, 83d Cong.).**

Federal cost for fiscal year was \$0 all of which was used for snagging and clearing activities. See Table R for list of studies.

**Flood insurance activities (Sec. 1301-1377, 1968 Housing and Urban Development Act, Public Law 90-448 as amended).**

In coordination with flood control activities, four flood insurance studies were continued. Inter-Agency Agreements EMW-96-1A-0294, EMW-96-1A-0195-FEMA, EMW-96-1A-0195, and EMW-97-1A-0140, at a fiscal year cost of \$126,300 under Federal Emergency Management Agency reimbursable order.

#### **41. SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS**

In accordance with sec. 7, Flood Control Act of 1944, summaries of monthly reservoir operations at Big Dry Creek, Boca, Camanche, Del Valle, Folsom, Friant (Millerton Lake), Indian Valley, Los Banos Detention, New Bullards Bar, New Don Pedro, New Exchequer (Lake McClure), New Melones, Oroville, Prosser, Shasta, and Stampede, CA; East Canyon, Echo, Jordanelle, Little Dell, Lost Creek, Pineview, Red Fleet, Starvation, and Wanship, UT; and Blue Mesa, Lemon, Paonia, Ridgway, and Vallecito, CO, were prepared. No water control manual revisions were completed due to environmental issues. Corps personnel provided advice Sec. 7 as requested during flood control operations at all c. 7 reservoirs. Fiscal year cost was \$1,710,700.

**Multiple-Purpose Projects including Power**

#### **42. NEW MELONES LAKE, CA**

**Location.** On Stanislaus River about three-quarters mile downstream from existing Melones Dam and about 35 miles northeast of city of Modesto. (See Geological Survey quadrangles of the area.).

**Existing project.** Provides for construction of (a) an earth and rockfill dam about 625 feet high to create a reservoir with gross storage capacity of about 2,400,000 acre-feet for flood control, irrigation,

power, general recreation, fish and wildlife, and other purposes, and (b) a power plant below the dam with an installed capacity of 300,000 kilowatts. Upon completion of construction of dam and power plant by the Corps, the project became an integral part of Central Valley project and is being operated and maintained by the Secretary of the Interior pursuant to Federal reclamation laws, except that the flood control operation of the project shall be in accordance with rules and regulations prescribed by the Secretary of the Army. Maintenance of Stanislaus River channel from Goodwin Dam to San Joaquin River to a capacity of at least 8,000 cubic feet per second will also be Corps responsibility. Estimated (October 1996 price level) Federal cost is \$402,000,000. For future non-Federal reimbursement, see Local cooperation paragraph. In addition, local interests expended \$300,000 for levees along lower reaches of Stanislaus River. Existing project was adopted by 1962 Flood Control Act (H. Doc. 453, 87th Cong., 2d sess., contains latest published map). This act modified original authorization adopted by 1944 Flood Control Act. (H. Flood Control Committee Doc. 2, 78th Cong., 2d sess., contains latest published map.) The 1944 Flood Control act established \$8 million monetary limitation for partial accomplishment of project. Further monetary authorizations of \$2.5 million, \$5 million, \$13 million, \$2 million, \$17 million, \$18 million, \$44 million, \$83 million, \$46 million, \$6 million, and \$61 million were provided for this project by Public Laws 235 and 780, 83d Cong., and 85-500, 90-17, 90-483, 91-282, 92-222, 93-251, 94-397, 95-104, and 95-189, making a total monetary authorization of \$305,500,000 available for the basin plan comprising Lower San Joaquin River and tributaries, including Tuolumne and Stanislaus Rivers, CA. Since FY 1979, appropriations have not been subject to the river basin monetary limitation.

**Local cooperation.** Based on approved preliminary cost allocation studies (July 1965) local interests will be required to pay 35.2 percent of first cost and 12.7 percent of annual operation and maintenance costs allocated to irrigation. In addition, 31.1 percent of first cost and 62.5 percent of annual cost would be allocated to power. Local interests must also maintain existing private levees along Stanislaus River from Goodwin Dam to San Joaquin River and prevent encroachment on channel and floodway between levees to preserve safe carrying capacity throughout the reach of at least 8,000 cubic feet per second. Recovery of costs allocated to irrigation and power

will be the responsibility of the Bureau of Reclamation. Reimbursement of costs will be in accordance with Bureau policies and procedures for the Central Valley project. State of California officially adopted project by chapter 918 of statutes of 1963, and by chapter 1438 of those statutes authorized State Reclamation Board to furnish required assurances. The Board, by letter dated December 13, 1963, stated it would furnish required assurances when formally requested to do so. Assurances were requested by letter of December 30, 1977. On October 2, 1979, the Board reaffirmed its intent to furnish the required assurances. On January 6, 1983, the Board provided formal assurances of local cooperation.

**Operations and results during fiscal year.** New work: Project close-out and flowage easement acquisition along the Lower Stanislaus River were continued. Maintenance: Maintenance and operation activities continued on Lower Stanislaus River.

**Historical summary.** Construction was initiated in August 1966. Main dam contract which was awarded in March 1974 has been completed; dam dedication ceremonies were held July 14, 1979. Cultural resources preservation, water intake facilities, flood control and irrigation tailrace modification, reservoir area clearing, Tuttletown Phase I recreation area, Oakdale recreation, Glory Hole Phase I and Phase II recreation area, and operations access road contracts have all been completed. Glory Hole minimal recreation facilities contract has been completed. Boundary fencing, Lower Stanislaus Phase I and Phase II minimal recreation facilities, Lower Stanislaus Corporation Yard, and Lower Stanislaus Administration Building contracts have been completed. Tuttletown minimal recreation facilities, McHenry recreation area, Tuttletown wastewater treatment, Knights Ferry recreation area, Knights Ferry Covered Bridge, Glory Hole recreation area sanitary system, Two-Mile Bar recreation, administration building, and Glory Hole recreation area force main contracts have been completed. Parrotts Ferry Bridge modification (Nov 93), Widening Highway 49 Intersection (Aug 94); Tuttletown Recreation Campgrounds, and Tuttletown and Glory Hole Improvement (Jan 94) have been completed. Remaining recreation facilities were unscheduled pending development of cost sharing agreements and/or specific Congressional appropriation of funds. A Memorandum of

Understanding between the Department of the Interior and the Department of the Army transferring the New Melones dam and reservoir from the Corps of Engineers to the Bureau of Reclamation was executed on November 20, 1979. Agreement provides that the Corps complete land acquisition actions and retain budgeting, design, and construction responsibility for reservoir clearing and recreation development; completion of cultural resources mitigation in project area was vested in the Department of the Interior. The California State Water Resources Control Board's Decision 1422 of April 1973 established conditions which impacted on the planned filling and operation of the project by the Department of the Interior. As a result, the Department of Interior brought suit against the State of California claiming State limitations on project operation were contrary to Congressional intent and authority. The case was heard before the U.S. District Court in Fresno, CA, and in early March 1981, a Federal judge ruled that the Federal Government could fill the New Melones reservoir for purpose of generating electrical power, but not for agricultural or other purposes. Both the Government and the California State Resources Control Board appealed this decision to the 9th Circuit Court of Appeals in San Francisco, CA.

On December 20, 1982, the Court upheld all 25 requirements placed on the Federal Government by the State Water Resources Control Board. The decision reversed the lower court's decision to permit filling of the reservoir for generating electrical power. The Bureau of Reclamation subsequently filed for a permit from the State Water Resources Control Board to fill the reservoir. Permit was approved. The Bureau had originally started generating power on a limited basis on July 1, 1979; however, after the filling of the reservoir in spring of 1983, full power generating benefits have been attained.

#### **General Investigations**

### **43. SURVEYS**

See Table 35-S.

### **44. COLLECTION AND STUDY OF BASIC DATA**

Technical assistance was performed for other Federal agencies as well as non-Federal agencies in connection with Flood Plain Management Services Program at fiscal year costs of \$244,697 federal funds and \$157,849 contributed funds. No Flood Plain Information Studies were prepared after FY 1980.

Fiscal year costs for hydrologic studies were \$6,935.

## **45. RESEARCH AND DEVELOPMENT**

The Hydrologic Engineering Center was designated as a separate Field Operating Agency as of January 1, 1979, in accordance with OCE permanent orders 1-1, January 10, 1979. In the reorganization of CEIWR, beginning in FY 2001 appropriations and costs will be reported in CEIWR's database not Sacramento District. Sacramento District will continue to provide advisory and administrative support services to HEC as specified in local support agreement DACW05-79-A-0038 of March 1979. Fiscal year close-out costs were \$56,082.

## **46. PRECONSTRUCTION ENGINEERING AND DESIGN**

### **AMERICAN RIVER WATERSHED, CA (COMPREHENSIVE PLAN)**

The projects are located in Placer, El Dorado, and Sacramento Counties on the North, Middle and South Forks of the American River and along the lower American River and Sacramento Rivers.

Recent evaluations indicate that the level of flood protection along much of the American River and in the Natomas area is less than the 100-year level. The Supplemental Information Report (SIR) was completed in March 1996 as directed by the Defense Appropriations act for FY 1993. The Chief of Engineer's Report recommended implementation of elements common to the final candidate plans presented in the SIR. These "common elements", were authorized for construction in the Water Resources Development Act (WRDA) of 1996. Other alternatives addressed in the SIR include: Folsom outlet modifications, Folsom Dam raising, downstream levee raising along the American and Sacramento Rivers, and upstream storage. Efforts are being continued to define plans for alternatives

leading to higher levels of flood protection for the Sacramento area and vicinity.

The Feasibility Report for the American River Watershed Investigation was completed in December 1991 and the Division Engineer's Report was issued in February 1992. Funds were appropriated in FY 1992 to initiate preconstruction engineering and design (PED) for the combined American River Watershed and Sacramento Metropolitan studies. The two projects were separated when WRDA 92 authorized the American River Watershed Project independently of the West Sacramento Project (Sacramento Metropolitan).

Sec. 566 of WRDA 99 directed additional flood control studies for: (a) increasing surcharge flood control storage at Folsom Dam and Reservoir, and (b) increased flood protection through levee modifications on the American and Sacramento Rivers, and directed the Corps to submit a report to Congress by March 2000 documenting results of the studies. The interim report, completed in January 2000, provides additional information on two flood damage reduction plans: The Folsom Enlargement Plan and the Modified Stepped Release Plan. Both of these plans, in addition to the already authorized plans, will further reduce the flood risk to Sacramento. A result of the public scoping process is the addition of the Folsom Dam advance releases in anticipation of high flood flows as a flood control alternative, and the inclusion of ecosystem restoration as a project purpose. A draft supplemental report describing the alternative plans was completed in September 2001. The non-Federal sponsors have selected the Federally supportable 7-foot Folsom Dam raise and ecosystem restoration plan as their preferred plan.

Sec. 101 of WRDA 99 authorized the Folsom Dam Modifications project as described in the Supplemental Information Report dated March 1996, as modified by the report entitled "Folsom Dam Modification Report, New Outlets Plan," dated March 1998, prepared by the Sacramento Area Flood Control Agency, at an estimated cost of \$150,000,000, with an estimated Federal cost of \$97,500,000 and an estimated non-Federal cost of \$52,500,000.

Estimated preconstruction planning cost is \$24,500,000.

#### **TRUCKEE MEADOWS, NV**

The project is located along the Truckee River from the metropolitan areas of Reno and Sparks in Washoe County, downstream to Pyramid Lake, NV. The project will provide flood protection from the Truckee River to the cities of Reno, Sparks, the Truckee Meadows and Rainbow Bend while re-connecting the floodplain, removing exotic species and restoring the riparian forest along the Truckee River.

The Truckee Meadows project was authorized for construction in the Water Resources Development Act (WRDA) of 1988 based on a 1985 Feasibility Report. During pre-construction, engineering and design (PED), a re-evaluation of project benefits and costs determined that the project, as then formulated, was no longer feasible due primarily to significant increases in land costs. A re-analysis was completed in a reconnaissance study completed in August 1997. The Corps reactivated the PED phase of the project in March 1998 with the first step to conduct a General Reevaluation Report and Environmental Impact Statement (GRR/EIS). At the request of the local sponsors, a Community Coalition process was initiated in April 2000 to assist in the formulation and selection of project alternatives.

The study area for the project is divided into three portions: (1) the floodplain of the Truckee River between Booth Street and U.S. Highway 395 (Downtown Reno Reach); (2) the floodplain of the Truckee River from Highway 395 to Vista, along with the nearby floodplains of Steamboat Creek and Boynton Slough (Truckee Meadows Reach); (3) the floodplain of the Truckee River between Vista and Pyramid Lake (Lower River Reach). Numerous studies have been completed that relate to environmental restoration, water use, hydrology, hydraulics, flooding, and urban development within the Truckee Meadows area and the Truckee River watershed.

The current preliminary alternatives for the Downtown Reno Reach include: bridge replacement of Sierra, Virginia and Lake Streets, replace floodwalls along the north banks upstream of Arlington Avenue to Lake Street and in areas where vacant terraced floodwalls; channelization by removing the existing diversion structure upstream of Arlington Avenue Bridge; channel widening on the north bank from Sierra to Lake streets; mini-spans to Center and/or Sierra Street bridges; building a culvert



around the replaced Lake Street Bridge; plazas; containment at First Street; a new span at Virginia Street Bridge; bridge rehabilitation at Sierra, Virginia and Lake Streets and floodproofing.

The current preliminary alternatives for flood damage reduction and ecosystem restoration in the Truckee Meadows Reach include two bridge and one roadway modifications, channel modification (i.e. channel benching, re-alignment of the North Truckee Drain, extension of the Airport Culvert on Boynton Slough), containment features ranging from 12.5 miles to 21 miles of floodwalls, levees and seepage remediation, floodplain management by floodproofing single family residences near Boynton Slough and detention basins at the University of Nevada, Reno Farms, Huffaker Hills and Mustang Ranch.

These preliminary plans also include recreation facilities with bicycle and pedestrian paths, river overlooks, and picnic sites. High, medium and low restoration measures have are being evaluated for the Truckee Meadows and Downstream Reaches. These measures include removing rip rap, restoring riparian forest, removing exotic species and providing geomorphic restoration.

Estimated preconstruction planning cost is \$14,000,000.

### **SOUTH SACRAMENTO, CA**

South Sacramento County Streams drainage basin is located in the southeastern portion of Sacramento County, California. The study consists of the Morrison Creek Stream Group Basin, approximately 180 square miles in size. The basin includes Morrison, Elder, Florin, Unionhouse and Laguna Creeks. Significant flooding occurred in 1952, 1955, 1962, 1963, 1967, 1969, 1973, 1982, 1986, 1995, and 1997.

Approximately 41,000 structures are within the 500-yr floodplain with an estimated value of \$5.9 billion. Levees along Morrison Creek and tributaries provide less than a 100-yr level of flood protection. Results of the feasibility study, completed in March 98, indicate the project would include channel and levee improvements and detention facilities.

PED agreement executed May 1998. Chief's Report was signed October 1998. PED agreement amended

Feb 2000 to increase cost and complete P&S with PED funding. PED agreement amended Dec 2000 to increase cost to incorporate changes and complete PED phase.

### **TULE RIVER, CA**

The project area is located within the 12,500 square-mi Tulare Lake Basin located in the southeast portion of the San Joaquin Valley. Tule River drains about 390 square mi into Success Lake and flows from the lake on to the valley through the city of Porterville, 5 miles downstream, and continues another 25 miles through agricultural areas, culminating in Tulare Lakebed. Serious flood problems occur in the Tule River Basin generally as a result of inadequate channel capacities. Flooding occurred in 1966 and 1983. 1983 Flood damages downstream in the Tulare Lakebed were extremely severe and widespread; damages attributed to the Tule River were approximately \$8 million.

The authorized project is to raise the gross pool elevation of Success Lake for flood control and irrigation water supply by raising the spillway 10 feet and widening the spillway from the existing 200 feet to 365 feet.

The feasibility report was completed and Division Engineer's notice was issued in September 1999. The project was authorized for construction in WRDA 1999. Funds to initiate pre-construction engineering and design (PED) were appropriated in FY 1999 and funds to initiate construction were appropriated in FY 2002. The Project Cooperation Agreement was approved by the Assistant Secretary of the Army (ASA(CW)) in April 2003. The first construction contracts consisting of mitigation and recreation modifications for the raised pool condition are scheduled for award in late 2003.

Total estimated project cost is \$25,300,000.

### **YUBA RIVER, CA**

The Yuba River lies between the Feather and American Rivers in northern California. The study is located in Sutter and Yuba Counties approximately 50 miles north of Sacramento. The principal urban centers within the study area include Marysville, Yuba City, Linda and Olivehurst.

Recommended project, which lies downstream of Daguerre Point and goldfields, would include levee improvements including installation of slurry walls, constructing landside berms, toe drains, and levee raising along the Yuba and Feather Rivers. Area has experienced 7 major floods. Despite modifications for flood protection over past years, the area is still vulnerable to catastrophic flooding as demonstrated by floods of February 1986 and January 1997. Damages were estimated at \$95 million and \$82.4 million, respectively.

Section 104 - Sponsor has been approved to proceed with advance work in conjunction with the Marysville Yuba City project to assure at least a 200-year level of flood protection is obtained. In October 1996, ASA(CW) approved the advance work for possible Section 104 credit/reimbursement. Current milestones for the project include: DE Notice - April 1998; Chief's Report - Nov 1998; PED Agreement - June 2000. Project authorized for construction WRDA 1999.

#### **47. OTHER WORK UNDER SPECIAL AUTHORITY**

##### **ASHLEY CREEK ECOSYSTEM, UT (Section 1135) Project Modification for Improvement of Environment**

The proposed project modification consists of restoring 2.4 miles of stream meanders and associated riparian vegetation on Ashley Creek. The site is part of a 12-mile reach that was straightened and enlarged (dredged) by the Ashley Creek Clearing and Snagging Project constructed by the Corps in 1966. The restoration project would modify the features of the clearing and snagging project by reconstructing stream meanders and replanting associated riparian vegetation on the reach of Ashley Creek most adversely affected by the flood control work. Estimated project cost is \$3,616,000.

Current project is proceeding under authority of Sec. 1135(b) of Water Resources Development Act (WRDA) of 1986.

Fiscal year costs were \$103,482.

##### **CHEROKEE CANAL, CA (Section 1135) Project**

###### **Modification for Improvement of Environment**

The Cherokee Canal project study area is the entire Dry Creek/Cherokee Canal watershed. Dry Creek becomes Cherokee Canal northeast of Richavale, then flows into Butte Creek and ultimately the Sacramento River east of the City of Colusa. The watershed lies west of the Feather River in Butte County. A high sedimentation rate in the Cherokee Canal land the resulting periodic dredging to maintain channel capacity has caused a loss of riparian and fish habitat.

The Cherokee Canal Section 1135 Ecosystem Restoration Project seeks to restore the ecosystem by implementing measures to improve stream channels, riparian habitats and wetland habitats. The alternatives are being formed to evaluate the sedimentation rate and transport within the watershed. These alternatives would include the location to best impact the project area with positive benefits and increase habitats for fish, waterfowl, migratory birds and other wildlife including listed endangered species. It should be noted that one alternative being explored is the restoration of an unfinished dry-dam in the upper watershed. If the alternative is found to have no merit, the possibility of changing the project to a Section 205, Flood Damage Protection Project exists.

Preliminary Restoration Plan was approved in January 00. Estimated project costs are \$5,000,000. Fiscal year costs were \$118,123.

##### **CHESTER, NORTH FORK FEATHER RIVER, CA (Section 1135) Project Modification for Improvement of Environment**

The project is located on the North Fork of the Feather Rive near Chester, CA 120 miles northeast of Sacramento, CA.

The project consists of a diversion dam and diversion channel, which protects the town of Chester from flooding by diverting flood flows. The fish passage modification project consists of construction of a shear boom which controls the amount of debris reaching the fish ladder structure, modification of the fish ladder itself and installation of an auxiliary water supply system in order to aid in attracting and guiding the fish.

Construction was completed in Jan 95 however, high flows in the spring of 1995 revealed that follow-on work would be required for the project to function properly. Completion of in-water work was partially completed during summer of 1999. Final contract completed Nov 00. Project transferred to local sponsor Dec 00. Project was fiscally completed March 02 at a cost of \$2,264,106.41.

**LOWER TRUCKEE RIVER, McCARRAN RANCH, NV (Section 1135) Project Modification for Improvement of Environment**

Lower Truckee River, McCarran Ranch, Washoe County, State of Nevada is a portion of the lower Truckee River on The Nature Conservancy's McCarran Ranch. It represents roughly five miles of the Truckee River, located approximately 15 miles downstream of Sparks.

The McCarran Ranch is deeply incised and separated from the floodplain in large part as a result of a previous flood control project. The Nature Conservancy is committed to restoring a healthy and functioning river system, including reconnecting the river to the floodplain. Estimated project cost is \$7,500,000.

Preliminary Restoration Plan (PRP) has been approved in Apr 02. Initiated Detailed Project Report (DPR) in May 02.

Fiscal year costs were \$216,578.

**MORMON CHANNEL, CA (Section 1135) Project Modification for Improvement of Environment**

Project was terminated in FY 03. Project is located in San Joaquin County, including a portion of the City of Stockton and an area northeast of the City of Stockton.

Project will restore the degraded aquatic ecosystem that resulted from the construction and operation of the Stockton Diverting Canal. Mormon Channel originates just downstream of New Hogan Dam and runs west southwest towards Stockton, roughly paralleling the Calaveras River. The Diverting Canal was constructed across Mormon Channel near Highway 99 to divert Mormon Channels floodwaters

away from eastern Stockton and back into the Calaveras River. The diversion has been an effective flood control measure, but has also excluded most flows from the downstream portion of Mormon Channel. A possible project alternative includes a mechanism whereby some floodwaters are transferred from the Stockton Diverting Canal into the downstream portion of Mormon Channel. This floodwater will be used as part of an ecosystem restoration effort encompassing the 6.3 miles of Mormon channel between the Diverting Canal and the Stockton Deepwater Ship Channel Turning Basin. Estimated project cost is \$6,000,000.

The PRP has been approved in Mar 99 and initiated Environmental Restoration Report (ERR) in May 99. Project will terminate due to request from local sponsor.

Fiscal year costs were \$54,226.

**MURPHY SLOUGH, CA (Section 1135) Project Modification for Improvement of Environment**

The project site is on the upper Sac River, near Chico Landing and within the Butte Basin Overflow Area. Potential restoration measures identified during the recon study of Murphy Slough include re vegetation of riparian forest and development of shaded riverine aquatic habitat. Restoration would provide acres for several State and/or Federally listed endangered or threatened bird and fish species; e.g. willow flycatcher, yellow-billed cuckoo, VELB, Swainsons hawk, Chinook salmon and steel head trout. Physical improvements are desirable along the upper Sacramento River system to improve both flood control conveyance and F&W habitat. Loss and deterioration of riparian habitat is contributing to the extinction and elimination of several wildlife species. Project was completed and post construction establishment contracts (irrigation, pest control, etc.) have been in place since late 2002. The established habitat had a better than expected result and was often viewed as a "poster project" for eco-restoration. Unfortunately, an out of control wildfire destroyed roughly 75 percent of the plantings on July 16<sup>th</sup> 2003. It is anticipated that costs will exceed \$500,000 to remediate for fire damage and re-establish plantings.

PCA was signed 18 September 1998. Project is in the construction phase.

Current project is proceeding under authority of Sec. 1135(b) of Water Resources Development Act (WRDA) of 1986.

Fiscal year costs were \$75,331.

**PINE FLAT TURBINE BYPASS, CA (Section 1135) Project Modification for Improvement of Environment**

The project is located on the Kings River approximately 20 miles east of Fresno, CA

The project was constructed for flood control and water conservation, consisting of Pine Flat Dam and downstream channel improvements. Penstocks were included in the construction of the dam and a power plant was added in 1984 by the Kings River Conservation District. Turbine bypass modification consists essentially of installing a steel conduit ahead of the power plant to allow releases through the penstocks when the turbines are off-line. Construction of Pine Flat Dam eliminated the native trout fishery in the lower Kings River, which now supports stocked and wild trout fishery. Releases from the dam have been too warm to support the fishery in late summer and early fall of below normal storage years. The modification would improve the water temperature released from the dam.

PCA was executed Nov 00. Completed the P&S and awarded the valve manufacture contract in Jun 01. Awarded installation contract Sep 01. Physical completion was April 2003. Fiscal year costs were \$6,261,380.

**PROSPECT ISLAND, CA (Section 1135) Project Modification for Improvement of Environment**

Project is located in Solano County, California, within the northwest portion of the Sacramento-San Joaquin Delta Region.

Prospect Island is a long, rectangular island comprised of 1,228 acres bordered by the Sacramento Deep Water Ship Channel (SDWSC) to the west and Miner Slough and Ryer Island to the east. The island has flooded four times, in 1983, 1986, 1995, and in January 1997. The Corps constructed levees adjacent to the SDWSC, which run parallel along the length of the island. These levees are damaged by wave wash from passing ocean vessels in the channel. The

construction of the ship channel and reclamation of adjacent lands have also contributed significantly to the loss of valuable wetlands in the study area. Estimated project cost is \$8,515,365.

PCA was executed in Sep 99. Plans and Specs were completed in July 01. In September 2002, a second construction contract was cancelled due to lack of non-Federal funds from the project sponsor. The PCA was placed into a three year deferred status in September 2002.

Fiscal year costs were \$7,065.

**SOUTH FORK PUTAH CREEK PRESERVE, CA (Section 1135) Project Modification for Improvement of Environment**

The project site is located near the south levee of South Fork Putah Creek, just southeast of the city of Davis. Project is grading and planted for habitat restoration. Estimated project cost is \$1,601,000.

PCA was signed on 18 December 1998.

The previous project was included under the Sacramento River Flood Control Project. Project is in the construction phase. Current project is proceeding under authority of Sec. 1135(b) of Water Resources Development Act (WRDA) of 1986: The project was completed and post-construction/plant establishment continues. A reoccurring problem with young plant destruction by voles had plagued the project. Additional plantings have been required and the maintenance contract has been extended to care for young, newly planted plant species. Additional funds in fiscal year 2005 are anticipated.

Fiscal year costs were \$91,247.

**STEAMBOAT CREEK, NV (Section 1135) Project Modification for Improvement of Environment**

Steamboat Creek, which is located in the Reno-Sparks metropolitan area, Washoe County, Nevada, is a major tributary to the Truckee River flowing from Washoe Lake, a distance of about 18 miles.

Hydraulic changes to Truckee River upstream of Steamboat Creek have caused a degradation of the stream and surrounding habitat. The ecosystem

restoration plan would include bank stabilization, improved fish and wildlife habitat, reduced aggradation to downstream reaches, and improved water quality along Steamboat Creek. Estimated project cost is \$7,500,000.

Preliminary Restoration Plan (PRP) has been approved in Nov 01. Initiated Detailed Project Report (DPR) in Jan 02.

Fiscal year cost were \$192,332.

**VIC FAZIO WILDLIFE AREA, CA (formerly Yolo Basin Wetlands, Sacramento River, CA, Section 1135)**

The project is primarily located within the boundaries of the Yolo Bypass, an operative feature of the Sacramento River Flood Control Project. The Yolo Bypass extends 43 miles from Fremont Weir on the Sacramento River, south to the town of Rio Vista where it rejoins the river.

During periods of high flows on the Sacramento River water is diverted through the Yolo Bypass, creating seasonal wetland areas. The 3,700-acre wildlife restoration area is expected to be a major stop for migratory waterfowl in the Pacific Flyway. Restoration of wetland habitat will attract additional waterfowl, wading birds and shore birds and contribute to the recovery of many Federal and state rare, threatened, or endangered species. The importance of the Yolo Bypass wetland to waterfowl and other water birds has increased due to the disappearance over recent decades of vital wetlands in the Central Valley. The project is the largest wetland restoration project west of the Florida everglades and consists of physical improvements to help create a mixture of native marsh, permanent and seasonal wetlands and riparian forest. Improvements include modifications to existing drainage canals or construction of small dikes and weirs to redirect available water sources to proposed wetland areas. Congress added construction of an administration and maintenance facility and a flood plain hydraulic management model as authorized project features. Current total project cost estimate is \$17,362,000, cost shared 70% Federal and 30% local sponsor.

The California State Department of Fish and Game is the non-Federal sponsor. The sponsor will furnish lands, easements, rights of way and borrow and

excavated or dredged material disposal areas; and bear all costs of operation, maintenance, repair, rehabilitation and replacement of project modifications for improvement of the environment. At the sponsor's request, separate Local Cooperation Agreements (LCA) were prepared for the Putah Creek Sinks and Yolo Causeway sites. The LCA for the Putah Creek Sinks site was executed in December 1993. The LCA for the Yolo Causeway site was executed in April 1995. A third LCA for a 180-acre site was executed in October 1996.

Efforts to complete the floodplain hydraulic management model and project close out and audit activities continue. Fiscal Year costs total \$17,768.

The project was authorized by the Water Resources Development Act (WRDA) of 1986, Public Law 99-662, Sec. 1135(b), as amended by Sec. 304 of WRDA 1990. The project was initiated in fiscal year 1991 with funds added by Congress to the Fiscal Year 1991 Appropriations Bill. A Project Modification Report and an Environmental Assessment/Initial Study were completed in April 1992. Three existing sites were identified for wetlands restoration: Putah Creek Sink (3,000 acres), Yolo Causeway (182 acres) and Willow Slough Bypass (345 acres). Willow Slough Bypass was later withdrawn due to difficulty in acquiring lands. The project was turned over to the Department of Fish and Game in November 1997. The Energy and Water Development Appropriations Act of 1999, Sec. 508 changed the project name from "Yolo Basin Wetlands" to "Vic Fazio Yolo Wildlife Area".

**YOLO WETLANDS BASIN, DAVIS SITE, SACRAMENTO, CA (Section 1135) Project Modification for Improvement of Environment**

Project is located contiguous to boundaries of Yolo Bypass and Willow Slough Bypass, which is a levied tributary of Sacramento River on west side of Yolo Bypass. Yolo Bypass and Willow Slough Bypass are operative features of the Sacramento River Flood Control Project.

Project include a 369-acre site that consists of 212 acres of permanent wetland, 64 acres of riparian woodland, 64 acres of grassland/upland, and 56 acres of seasonal wetland, dikes, roads, gates, ponds and islands. Water for wetland site is available from City of Davis wastewater treatment plant and from its

stormdrain system. Estimated project cost is \$6,000,000.

A previous Davis site was included under Yolo Basin Wetlands, Sacramento River project, but was withdrawn for consideration by local sponsor due to difficulty in obtaining lands. Current project is proceeding under authority of Sec. 1135(b) of Water Resources Development Act (WRDA) of 1986.

Fiscal year costs were \$0



**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
1.	Sacramento River CA (Federal Funds)	New Work Approp. Cost Maint. Approp. Cost	- - 1,909,000 1,725,466	- - 2,802,269 2,985,327	- - 1,888,000 1,765,162	- - 1,283,000 1,147,228	40,331,192 <sup>1</sup> 40,331,192 <sup>1</sup> 65,204,947 <sup>2</sup> 65,201,796 <sup>3</sup>
	(Contrib. Funds. Other)	Maint Contrib. Cost	- - -	- - -	- - -	- - -	85,000 <sup>4</sup> 85,000
2.	Sacramento River Deep Water Ship (Required Contrib. Funds)	New Work- Approp. New Work Contrib.	- 7,298 -	- 2,349 -	2,000 27,983 -	- 41 -	7,818,474 <sup>5</sup> 7,812,678 2,610,000
	(Contrib. Funds, Other)	Cost Maint. Contrib. Cost	2,177 - - -	7,574 - - -	1,670 - - -	- - - -	2,600,893 15,000 14,578
3.	San Francisco Bay to Stockton, CA (John F. Baldwin and Stockton Ship Channels)	New Work Approp. Cost	- 10,859	- 7,840	14,000 10,900	- 3,251	64,710,000 <sup>6</sup> 64,218,214 <sup>7</sup>
4.	San Joaquin River, CA	New Work Approp. Cost Maint. Approp. Cost	- - 2,607,000 2,617,123	- - 1,970,639 1,919,481	- - 1,500,700 1,353,749	- - 1,126,500 1,324,112	5,833,117 <sup>8</sup> 5,833,117 <sup>9</sup> 35,062,221 35,053,311
5.	American River Watershed (Common Elements)	New Work Approp. Cost- New Work Contrib.- Cost-	13,129,000 13,865,637 1,121,200 3,055,566	26,622,000 24,932,029 7,477,900 8,973,723	16,322,000 18,143,629 6,466,778 5,753,985	13,499,900 14,053,563 2,535,537 4,710,546	82,188,900 81,739,342 25,025,415 23,637,333
6.	American River Folsom Modifications	New Work Approp. Cost	- - -	4,690,000 4,505,343	5,897,000 5,246,597	6,514,000 6,995,927	17,101,000 16,747,867





**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
		New Work					
		Contrib.	-	-	-	-	0
		Cost	-	-	-	-	0
7.	American River Watershed (Natomas)	New Work					
		Approp.	145,000	17,000	30,000	1,170,000	16,240,000
		Cost	228,709	64,806	37,314	1,177,697	16,671,710
8.	Buchanan Dam- H.V. Eastman Lake Chowchilla River, CA (Federal Funds)	New Work					
		Approp.	-	-	-	-	27,369,597
		Cost	-	-	-	-	27,369,597
		Maint					
		Approp.	1,657,500	1,697,602	1,785,796	1,753,154	30,431,445
		Cost	1,457,826	1,657,911	1,696,874	1,930,044	30,426,662
	(Contrib. Funds Other)	New Work					
		Contrib.	-	-	-	-	111,187 <sup>10</sup>
		Cost	-	-	-	-	111,187 <sup>10</sup>
9.	Cache Creek Settling Basin, CA (Federal Funds) (Required Contrib. Funds)	New Work					
		Approp.-	30,000	-	-	80,000	13,721,000
		Cost	-	16,577	7,339	86,776	13,719,609
		New Work					
		Contrib.	-	-	-	-	1,279,000
		Cost	27,464	15,433	13,410	-80,070	1,146,051
	(Contrib. Funds, Other)	New Work					
		Contrib.	-	-	-	-	724,000 <sup>11</sup>
		Cost	-	-	-	-	676,755 <sup>12</sup>
10.	Calaveras River and Littlejohn Creek and Trib- utaries including New Hogan Lake & Farmington Dam CA (Federal Funds) (Contrib. Funds, Other)	New Work					
		Approp.	-	-	-	-	23,723,144 <sup>13</sup>
		Cost	-	-	-	-	23,723,144 <sup>13</sup>
		Maint					
		Approp.	2,137,900	2,742,504	2,606,407	2,442,000	48,454,422 <sup>14</sup>
		Cost	2,196,515	2,715,262	2,288,667	2,794,126	48,030,730 <sup>14</sup>
		New Work					
		Contrib.	-	-	-	-	1,499,951 <sup>15 16</sup>
		Cost	12,131	-	2,432	6,007	1,490,319 <sup>15 17</sup>
11.	Colorado River at Great Junction, CO (Federal Funds)	New Work					
		Approp.	-73,200	-	-	-	834,900
		Cost	-33,026	-	-	-	839,963
	(Required Contrib. Funds)	New Work					
		Contrib.	-1,545	-	-	-	96,773
		Cost	40,520	-	-	-	96,773

**SACRAMENTO, CA DISTRICT**

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
12.	Corte Madera Creek, CA (Federal Funds) (Required Contrib. Funds)	New Work Approp. Cost New Work Contrib. Cost	- - - - -	- - - - -	-6,000 842 - - -	- - - - -	12,452,725 12,452,725 190,213 <sup>19</sup> 190,213 <sup>19</sup> 804,761 <sup>20</sup> 804,761 <sup>20</sup>
	(Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	
13.	Coyote Creek, CA	New Work Approp. Cost New Work Contrib. Cost	300,000 113,330 - 103,229	598,000 342,069 - 4,336	724,000 898,679 450,000 190,974	-295,000 -41,197 0 182,973	29,491,000 29,456,841 1,355,000 1,260,762
14.	Fairfield Vicinity Streams, CA (Federal Funds) (Required Contrib. Funds)	New Work Approp. Cost New Work Contrib. Cost	- - - - -	-20,000 349 - - -	-2,000 362 - - -	- - - - -	14,717,000 14,717,000 592,381 592,381
	(Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	3,779,000 <sup>21</sup> 3,770,497 <sup>22</sup>
15.	Guadalupe River, CA (Required Contrib. Funds)	New Work Approp. Cost Contrib. New Work Contrib. Cost	4,194,000 8,297,194 2,580,509 1,563,499	5,866,000 8,137,792 -1,214,454 466,173	12,651,000 13,673,592 1,116,000 989,240	26,834,000 27,512,492 3,153,240 3,617,909	95,173,000 94,901,779 12,592,215 12,292,785
	(Contrib. Funds, Other)	New Work Contrib. Cost	919,491 1,448,545	1,999,152 540,104	1,859,000 1,017,122	5,144,476 3,765,578	15,343,759 <sup>23</sup> 11,305,787 <sup>24</sup>
16.	Hidden Dam Hensley Lake, Fresno River, CA (Federal Funds)	New Work Approp. Cost Maint Approp. Cost	- - 1,491,000 1,545,946	- - 1,618,525 1,602,597	- - 1,898,920 1,665,20	- - 1,785,000 2,038,783	30,555,426 30,555,426 31,683,263 31,677,574
	(Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	165,112 <sup>25</sup> 165,112 <sup>25</sup>

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
17.	Isabella Lake, Kern River, CA (Federal Funds)	New Work Approp. Cost Maint Approp. Cost	- - 834,810 836,005	- - 1,047,795 1,063,610	- - 1,263,532 1,125,562	- - 1,180,300 1,320,585	24,450,537 <sup>27</sup> 24,450,537 <sup>27</sup> 51,213,154 <sup>28</sup> 51,187,130 <sup>28</sup>
	Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	753,000 <sup>29</sup> 747,718 <sup>30</sup>
18.	Kaweah and Tule Rivers including Terminus Dam and Success Lake, CA (Federal Funds)	New Work Approp. Cost Maint Approp. Cost	595,000 261,817 3,573,000 3,614,081	939,000 1,112,202 3,958,352 3,907,238	4,750,000 4,808,638 5,178,320 3,884,326	7,786,000 7,789,648 3,287,063 4,582,505	49,067,230 <sup>31</sup> 48,969,535 <sup>31</sup> 77,975,309 <sup>32</sup> 77,282,436 <sup>32</sup>
	Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	633,420 <sup>33 34</sup> 632,695 <sup>33 35</sup>
19.	Little Dell Lake, UT (Federal Funds)	New Work Approp. Cost	-400,000 -407,677	-50,000 2,192	- 15,890	-150,000 -150,000	40,456,900 40,449,507
	(Required Contrib. Funds)	New Work Contrib. Cost	- -242,644	- 50,699	- 74,473	- 170,737	19,954,500 19,317,434
	(Contrib. Funds, Other)	New Work Contrib. Cost	- -	- -	- -	- -	4,300,147 <sup>36</sup> 4,300,147 <sup>37</sup>
20.	Martis Creek Lake, New Work Martis Creek, NV, and CA	Approp. Cost Maint Approp. Cost	- - 521,000 551,391	- - 807,878 712,912	- - 675,000 713,070	- - 549,000 611,103	8,504,989 <sup>38</sup> 8,504,989 <sup>38</sup> 11,248,261 11,247,481
21.	Merced County Streams, CA (Federal Funds)	New Work Approp. Cost	919,000 619,205	519,000 766,925	300,000 362,226	505,000 481,605	22,521,000 22,456,023
	(Required Contrib. Funds)	New Work Contrib. Cost	- -	251,052 274,362	- 22,853	- -	865,557 892,179
	(Contrib. Funds Other)	New Work Approp.	- -	- -	- -	- -	4,719,938 <sup>39 40</sup>

**SACRAMENTO, CA DISTRICT**

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
		Cost	25,539	-	-	-	4,560,608 <sup>39 40</sup>
22.	Merced County Stream Group, CA	New Work					
		Approp.	-	-	-	-	2,751,259 <sup>41</sup>
		Cost	-	-	-	-	2,751,259 <sup>41</sup>
		Maint.					
		Approp.	62,000	190,381	255,000		3,927,567
		Cost	62,559	188,606	239,057		3,927,062
23.	Napa River, CA (Federal)	New Work					
		Approp.	2,152,000	2,192,000	7,456,000	10,590,000	22,390,000
		Cost	1,996,761	2,197,473	7,114,292	10,589,973	21,898,499
	(Contrib. Funds)	New Work					
		Contrib.	1,800,000	772,400	2,325,000	-	4,897,400
		Cost	856,690	2,434,979	1,119,275	833,274	4,244,218
24.	Pajaro River Basin CA (Federal Funds)	New Work					
		Approp.	-	-	-	-	8,686,968 <sup>42</sup>
		Cost	-	-	-	-	8,686,967 <sup>42</sup>
	(Required Contrib. Fund)	New Work					
		Contrib.	-	-	-	-	37,250 <sup>43</sup>
		Cost	-	-	-	-	37,250 <sup>44</sup>
25.	Pine Flat Lake and New Work Kings River, CA (Federal Fund)	Approp.	-	-	-	-	43,356,265 <sup>45</sup>
		Cost	-	-	-	-	43,356,265 <sup>45</sup>
		Maint.					
		Approp.	2,256,000	2,510,166	4,115,831	1,767,000	59,479,043 <sup>46</sup>
		Cost	2,322,568	1,494,767	2,753,836	3,089,194	59,411,024 <sup>46</sup>
	(Contrib. Funds, Other)	New Work					
		Contrib.	-	-	-	-	110,000 <sup>47</sup>
		Cost	-	-	-	-	110,000 <sup>47</sup>
26.	Redbank and Fancher Creeks, CA (Federal Funds) (Required Contrib. Funds)	New Work					
		Approp.	-	-	-	-	47,516,065 <sup>48</sup>
		Cost	3,461	359	-	-	47,515,727 <sup>48</sup>
		New Work					
		Contrib.	-	-	-	-	3,354,920
		Cost	6,180	17,781	13,808	18,910	3,308,228
	(Contrib. Funds, Other)	New Work					
		Contrib.	-	-	-	-	759,580 <sup>49</sup>
		Cost	-	-	-	-	701,546
27.	Restoration of Abandoned Mines	New Work					
		Approp.	-	2,380,000	163,000	1,248,000	3,791,000

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
		Cost	-	369,983	1,192,260	1,231,082	1,793,325
28.	Rural Nevada	New Work					
		Approp.	-	1,294,000	-586,000	1,851,000	2,559,000
		Cost	-	18,666	468,282	2,050,083	2,537,031
29.	Russian River	New Work					
	Basin, CA, Coyote	Approp.	-	-	-	-	14,435,869 <sup>50</sup>
	Valley Dam (Lake	Cost	-	-	-	-	14,435,869 <sup>50</sup>
	Mendocino) and	Maint.					
	Channel Improve-	Approp.	-	-	-	-	44,777,546 <sup>51 52</sup>
	ments (Federal	Cost	-	-	-	-	44,777,546 <sup>51 52</sup>
	Funds)						
	(Contrib. Funds,	New Work					
	Other)	Contrib.	-	-	-	-	589,911 <sup>53</sup>
		Cost	-	-	-	-	581,774 <sup>54</sup>
	Dry Creek (Warm	New Work					
	Springs) Lake	Approp.	50,000	-	81,000	-	333,364,645 <sup>55</sup>
	and Channel	Cost	38,214	29,407	47,917	-	333,342,341 <sup>55</sup>
	Improvements, CA	Maint					
	(Federal Funds)	Approp.	-	-	-	-	32,915,552 <sup>56</sup>
		Cost	-	-	-	-	31,836,635 <sup>57</sup>
	(Contrib. Funds,	New Work					
	Other)	Contrib.	-	-	-	-	230,574 <sup>58</sup>
		Cost	-	-	-	-	228,732 <sup>59</sup>
30.	Sacramento River	New Work					
	and Tributaries, CA	Approp.	2,803,000	3,929,000	3,546,000	1,837,000	158,475,000 <sup>60 61</sup>
	from Collinsville to	Cost	3,405,859	3,684,201	2,960,415	2,673,304	158,138,956 <sup>60</sup>
	Shasta Dam	Maint					
	(Federal Funds)	Approp.	1,899,000	1,936,010	2,294,644	1,956,000	40,413,782 <sup>62</sup>
		Cost	1,915,496	1,919,967	2,112,324	2,157,961	40,410,372 <sup>62</sup>
	(Required Contrib.	New Work					
	Funds)	Contrib.	1,860,000	2,000,000	1,000,000	-	34,284,354
		Cost	1,167,367	2,730,625	597,349	-183,108	32,816,780
	(Contrib. Funds,	New Work					
	Other)	Contrib.	-	-	-	-	2,927,796 <sup>63 64</sup>
		Cost	-	-	-	-	2,925,131 <sup>63 64 65</sup>
31.	San Lorenzo, CA	New Work					
	(Federal Funds)	Approp.	5,546,000	6,702,000	1,792,000	462,400	17,502,400
		Cost	5,285,178	7,095,418	1,673,161	734,246	17,352,393
	(Required Contrib.	New Work					
	Funds)	Contrib.	978,669	1,751,777	180,000	-	3,482,446
		Cost	801,038	2,117,535	333,274	69,753	3,362,770

**SACRAMENTO, CA DISTRICT**

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
32.	South Sacramento County Streams	New Work Approp.	-	-	291,000	565,000	856,000
		Cost	-	-	228,550	578,007	806,557
		New Work Contrib.	-	-	-	-	0
		Cost	-	-	-	-	0
33.	Stockton- Farmington Recharge	New Work Approp.	-	-	104,000	550,000	654,000
		Cost	-	-	43,968	254,628	298,596
34.	Stockton Metro Reimbursable	New Work Approp.	-	142,000	10,083,000	3,041,000	1,326,600
		Cost	-	88,209	10,103,238	3,055,974	13,247,421
35.	Tule River, CA	New Work Approp.	-	-	505,000	880,000	1,385,000
		Cost	-	-	447,327	738,221	1,185,548
		New Work Contrib.	-	-	-	191,307	191,307
		Cost	-	-	-	8,854	8,854
36.	Upper Jordan UT	New Work Approp.	150,000	270,000	423,000	45,000	1,421,000
		Cost	206,000	251,675	421,234	96,052	1,406,045
37.	Walnut Creek, CA (Federal Funds)	New Work Approp.	-	475,000	95,000	-	72,412,430 <sup>66</sup>
		Cost	6,995	666,933	107,300	70,201	72,357,243 <sup>67</sup>
	(Required Contrib. Funds)	New Work Contrib.	-	75,190	-	41,000	5,799,662 <sup>68</sup>
		Cost	-	-	46,000	206	5,724,063 <sup>69</sup>
	(Contrib. Funds, Other)	New Work Contrib.	-	-	-	-	14,783,553 <sup>70</sup>
		Cost	-	-	-	-	14,783,553 <sup>70</sup>
38.	West Sacramento	New Work CA					
		Approp.	3,093,000	3,898,000	399,000	2,837,700	18,997,700
	(Federal Funds)	Cost	2,911,110	4,212,191	572,828	2,939,053	18,772,890
	(Require Contrib. Funds)	New Work Approp	-	698,915	358,084	-	4,876,999
		Cost	297,663	1,624,758	344,298	483,651	3,800,345

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
39.	Wildcat and San Pablo Creeks, CA (Federal Funds) (Required Contrib. Funds)	New Work Approp. Cost New Work Contrib. Cost	12,000 -36,689 - 10,449	-10,000 136 - 900	- 332 - 1,289	- 2,141 - 670	20,375,000 20,337,993 1,620,000 1,601,544
	(Contrib. Funds, Other)	New Work Contrib. Cost	- - -	- - -	- - -	- - -	1,937,000 <sup>71</sup> 1,906,943 <sup>72</sup>
40.	Lower San Joaquin River and Tributaries, CA including Tuolumne and Stanislaus Rivers, CA, New Melones Lake, CA (Federal Funds) (Contrib. Funds, Other)	New Work Approp. Cost Maint Approp. Cost New Work Contrib. Cost	- 19,742 1,721,000 1,778,408 - -	4,300 12,487 1,659,059 1,659,828 - -	-10,000 6,517 1,800,000 1,585,438 - -	- 66 1,554,100 1,785,228 - -	371,157,296 <sup>73 74</sup> 371,153,665 <sup>74</sup> 22,541,875 22,541,521 80,000 <sup>75</sup> 80,000 <sup>75</sup>



**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

1. Includes the following amounts for new work:  
Regular Funds: Previous project, \$185,198; existing project, \$585,436 for shallow-draft and \$39,650,558 for deep-draft.

2. Includes the following funds for maintenance:  
Regular Funds: Previous project, \$553,720; existing project, \$17,224,432 for shallow-draft and \$41,383,526 for deep-draft; and deferred maintenance funds, \$70,000 for shallow-draft.

3. Includes the following costs for maintenance:  
Regular Funds: Previous project, \$553,720; existing project, \$17,224,432 for shallow-draft and \$41,194,611 for deep-draft; and deferred maintenance funds, \$70,000 for shallow draft.

4. Includes \$85,000 contributed funds, other, from Sacramento-Yolo Port District for clearing and grubbing on dredged material deposit areas to be used on ship channel maintenance dredging work.

5. Includes unobligated carryover for continuation of planning and engineering (CP&E) funds as of September 30, 1985 (\$33,474) for Sacramento River Deep Water Ship Channel to be included in project cost (for cost sharing) per TWX of September 9, 1985.

6. Includes \$28,326,800 funds for Sacramento District.

7. Includes \$28,298,863 costs for Sacramento District.

8. Includes \$1,158,348 public work funds, of which \$207,198 was for work done along 30-foot channel in Suisun Bay Channel; excludes \$19,000 expended for engineering for inactive portion of 1950 modification. In addition, \$1,342,500 was expended from required contributed funds

9. In addition, \$1,250 was expended from required contributed funds for maintenance.

10. Contributed funds, other, from State of California for design and construction of downstream channel improvements on Ash and Berenda Sloughs below Buchanan Dam.

11. Includes \$724,000 contributed funds, other, from State of California for relocation activities including demolition or salvage of various pipes and facilities, constriction of ramps, turnouts, pipe gates and bank protection at Cache Creek Settling Basin.

12. Includes \$676,755 contributed funds, other, costs for relocation activities for State of California.

13. Includes code 710 funds and costs for recreation facilities at New Hogan lake: total to date \$897,742.

14. Includes \$99,000 special recreation use fees and costs at New Hogan Lake, and \$826,600 maintenance and operation of dam funds and costs (96X5125) at New Hogan Lake beginning in FY 1988.

15. For miscellaneous construction under local cooperation requirements, primarily for Bear Creek, San Joaquin County; includes \$108,056 as related to Duck and Littlejohn Creeks channel improvements as part of Farmington Dam project unit.

16. Includes \$393,195 contributed funds, other from California Department of Boating and Waterways for design and construction of boat launching and related facilities, and \$30,000 for design and construction of a boarding float at North Shore recreation area at New Hogan Lake.

17. Includes \$104,000 contributed funds, other, and costs from Calaveras County Water District for New Hogan hydropower studies.

18. Includes \$6,999,725 San Francisco District construction funds and costs for Corte Madera Creek.

19. \$8,695 contributed funds transferred to Sacramento District in FY 1983. Includes \$97,400 San Francisco District required contributed funds and costs.

20. Contributed funds, other, and costs, from Marin County including \$536,921 for miscellaneous bridge and road relocations and \$267,840 for additional expenses for disposal sites at Corte Madera Creek.

21. Includes \$3,643,000 contributed funds, other, from the State of California for relocation (automotive type bridge) at Laurel Creek Diversion near Fairfield, \$113,000 from City of Fairfield for Phase III contract for channel development on Laurel Creek, and \$23,000 from City of Suisun for Phase IIA contract for widening of Railroad Avenue

22. Includes \$3,638,022 contributed funds, other costs for relocations at Laurel Creek Diversion, \$19,537 contributed funds, other costs for Phase III contract, and \$112,939 for Phase IIA contract.

23. Includes contributed funds, other: \$2,905,630 for recreation betterment, \$2,195,591 for NED relocation and \$70,000 for incremental relocations at Guadalupe River.

24. Includes contributed funds, other costs: \$2,624,578 for recreation betterment, \$1,496,809 for NED relocations and \$0 for incremental relocations at

**TABLE 35-A (Cont'd)      COST AND FINANCIAL STATEMENT**

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Guadalupe River, and \$1,175,848 for flood control  
betterments.

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

25. Contributed funds, other from the State of California for miscellaneous design and construction at Hidden Dam.

26. Includes \$2,199,085 code 710 funds and costs for recreation facilities at Isabella lake and \$224,000 Code 713 funds and costs for improvement at Tillie Creek and Live Oak campgrounds.

27. Includes \$407,640 special recreation use fees and costs at Isabella Lake.

28. Includes \$131,900 maintenance and operation of dam funds and costs (96X5125) at Isabella Lake beginning in FY 1985.

29. Includes \$438,000 contributed funds, other, from California Department of Boating and Waterways for design and construction of boat launching and related facilities at Old Isabella Road and Isabella Peninsula and \$337,500 for Isabella Dam hydropower studies.

30. Includes \$438,000 contributed funds, other, costs for boat launching and related facilities at Old Isabella Road and Isabella Peninsula, and \$309,808 costs for Isabella Dam hydropower studies.

31. Includes code 710 funds and costs for recreation facilities: Success Lake: Total to date \$747,048. Terminus Dam: Total to date: \$704,000.

32. Includes \$165,000 special recreation use fees and costs at Success Lake.

33. Includes contributed funds, other, from State of California Department of Boating and Waterways and costs for acquisition of a boarding float at Success Lake, \$30,000 and at Terminus Dam, \$12,420.

34. Includes contributed funds, other, from Kaweah River Power Authority, Visalia, California for Terminus Dam hydropower studies, \$423,000; and from DITT, Inc., Paris, France, for Success Lake hydropower studies, \$168,000.

35. Includes contributed funds, other, costs for Terminus Dam hydropower studies, \$422,697, and for Success Lake hydropower studies, \$167,579.

36. Includes \$4,300,147 contributed funds, other from the Metropolitan Water District of Salt Lake City for relocation of State Highway 65 at Little Dell Lake.

37. Includes \$4,300,147 contributed funds, other, costs for relocation of State Highway 65 at Little Dell Lake.

38. Includes \$1,200 initiation of plans for specifications for Code 710 recreation facilities, for FY 1978. Construction of recreation facilities at

Martis Creek Lake under Code 720 was determined to be infeasible.

39. Includes contributed funds, other \$4,572,938, for lands, easements and rights-of-way for Castle Dam from State of California and contributed funds, other costs for lands, easements and rights-of-way for Castle Dam.

40. Includes \$274,000 contributed funds, other, relocation and \$227,968 costs.

41. In addition, \$66,532 expended for new work from contributed funds, other, miscellaneous construction under local cooperation requirements as related to acquisition of right-of-way and utility alterations for Merced County Stream Group.

42. Includes \$1,949,968 San Francisco construction funds and costs and \$260,000 Sacramento general investigation funds and costs for Pajaro River.

43. Includes \$37,250 contributed funds, other, from Santa Clara Valley Water District for bridge relocation at Pajaro River.

44. Includes \$37,250 contributed funds, other, costs for bridge relocation at Pajaro River.

45. Includes code 710 funds and costs for recreation facilities at Pine Flat Lake: Total to date: \$1,595,100. Includes Public Work Acceleration, Executive (PL 87-68) (Transfer to Corps of Engineers, Civil) 1963 funds and costs (\$239,235) for recreation facilities and \$19,600 Code 713 funds and costs for Pine Flat fish barrier.

46. Includes \$158,300 special recreation fees and costs at Pine Flat Lake and \$799,785 maintenance and operation of dam funds and costs at Pine Flat Dam.

47. Miscellaneous construction and engineering and design services (non-project) accomplished at expense of State of California under local cooperation requirements in connection with acquisition of rights-of-way and utility alterations at Pine Flat Lake.

48. Includes unobligated carryover for continuation of planning and engineering (CP&E) funds as of September 30, 1985 (\$29,065) and FY 1986 allocation for Redbank and Fancher Creeks to be included in project cost (for cost sharing) per TWX of September 9, 1985.

49. Includes contributed funds, \$759,580 other, from Fresno Metropolitan Flood Control District for road relocation and betterments (Nees Avenue) at Fancher Dam and includes \$701,546 contributed

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT**

funds, other costs for road relocation (Nees Avenue) and betterments at Fancher Dam.

50. Excludes \$5,598,000 contributed funds: \$400,000 for recreation facilities at completed projects funded under Public Works Acceleration Program; and \$1,628,411 for recreation facilities at completed projects funded under Code 711 at Coyote Valley Dam, Lake Mendocino.

51. Includes \$94,459 special recreation use fees and costs (FY 1982-1983), but excludes prior special recreation fees and cost for Coyote Valley Dam, Lake Mendocino.

52. Includes \$1,625,280 maintenance and operation of dam funds and costs at Coyote Valley Dam, Lake Mendocino for FY 1985 through FY 1996.

53. Includes \$251,911 contributed funds, other from City of Ukiah for Coyote Valley Dam, Lake Mendocino, hydropower studies; and \$338,000 from California department of Boating and Waterways for launching facility at Lake Mendocino.

54. Includes \$250,117 contributed funds, other, costs for Coyote Valley Dam, Lake Mendocino, hydropower studies; and \$331,657 for California Department of Boating and Waterways for launching facility at Lake Mendocino.

55. Includes \$253,421,793 San Francisco construction funds and costs through August 1983 for Dry Creek, Warm Springs Dam.

56. Includes \$964,114 San Francisco maintenance funds and costs through April 1982 for Dry Creek, Warm Springs Dam.

57. Includes \$75,400 maintenance and operations of dam funds and costs at Dry Creek, Warm Springs Dam.

58. Includes \$208,074 contributed funds, other, from Sonoma county for Dry Creek, Warm Springs, hydropower studies; and \$22,500 from City of Ukiah for hatchery pump design at Lake Mendocino.

59. Includes \$208,074 contributed funds, other, costs for Dry Creek, Warm Springs hydropower studies; and \$20,658 costs for hatchery pump design.

60. Excludes \$614,608 for Table Mountain (Iron Canyon) project, deauthorized August 5, 1977, and \$531,000 for Sacramento River and Major and Minor Tributaries portions which are considered inactive and deferred.

61. Includes Code 710 funds and cost for recreation facilities at Black Butte lake: Total to date \$1,000,162.

62. Includes \$104,100 special recreation use fees and costs at Black Butte Lake.

63. Miscellaneous construction and engineering and design services (non-project) accomplished at expense of State of California under local cooperation requirements in connection with acquisition of rights-of-way and utility alterations (primarily for Sacramento River and Major and Minor Tributaries project). Includes State Highway Commission payment, \$789,008, for use of excess excavation from Chico and Mud Creeks and Sandy Gulch (Sacramento River and Major and Minor Tributaries) for freeway embankment through the city of Chico.

64. Includes \$41,984 contributed funds, other, from State of California for required modification of existing private facilities and salmon rearing habitat, Sacramento River, Chico Landing to Red Bluff; \$15,977 contributed funds, other, from State of California Department of Boating and Waterways for replacing a boarding float at Orland Buttes boat launching ramp at Black Butte Lake; \$392,000 contributed funds, other, from the City of Santa Clara for hydropower studies at Black Butte Lake; and \$59,334 contributed funds, other from State of California for relocation.

65. Includes \$389,335 contributed funds, other, costs for Black Butte hydropower studies; and \$59,334 costs for relocations.

66. Includes \$8,849,825 San Francisco construction funds for Walnut Creek.

67. Includes \$9,049,609 San Francisco construction costs for Walnut Creek.

68. Includes \$450,268 San Francisco required funds for Walnut Creek.

69. Includes \$525,846 San Francisco required costs for Walnut Creek.

70. Includes \$400,348 San Francisco contributed funds, other, and contributed funds costs for Walnut Creek.

71. Includes \$1,937,000 contributed funds, other, from Contra Costa Flood Control and Water Conservation District for replacement of sewer line in Richmond for Wildcat and San Pablo Creeks project.

72. Includes \$1,906,943 contributed funds, other, costs for replacement of sewer line in Richmond for Wildcat and San Pablo Creeks project.

73. Excludes funds applicable to other units of this basin authorization (Lower San Joaquin River and Tributaries, and Tuolumne River Basin, California). (See Table 35-E).

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**TABLE 35-A (Cont'd)      COST AND FINANCIAL STATEMENT**

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74. Includes \$110,000 utilized for preparation of 1957 Economic Feasibility Report and of Revised Feasibility Report (FY 1960, 1961, and 1962) applicable to 1962 reauthorization of project.

75. Includes \$80,000 contributed funds, other, and costs, from the Bureau of Reclamation for visitors center at Mark Twain area, New Melones Lake.

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-A (Cont'd) COST AND FINANCIAL STATEMENT  
PRECONSTRUCTION ENGINEERING AND DESIGN**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
	American River Watershed CA,	Approp.	4,290,000	3,629,000	2,303,000	839,000	
		Cost	4,022,524	3,863,698	2,110,741	931,880	
	Caliente Creek CA	New Work					
		Approp.	-	-	-		60,000
		Cost	-	-	-		60,000
	Coyote and Berryessa Creeks, CA	New Work					
		Approp.	-	-	-		4,368,900
		Cost	-	-	-		4,368,900
	Napa River, CA	New Work					
		Approp.	-123,000	-	-		12,947,000
		Cost	155,246	-100	100		12,947,000
	Kaweah River	New Work					
		Approp	651,000	-36,000	-		3,515,000
		Cost	751,360	67,895	-		3,515,000
	South Sacramento	New Work					
		Approp	750,000	615,000	6,812	-	2,320,812
		Cost	665,701	152,313	78,974	-	1,748,387
	San Lorenzo River, CA	New Work					
		Approp.	-	-	-	-	813,000
		Cost	-	-	-	-	730,243
	Truckee Meadows NV	New Work					
		Approp.	936,000	900,000	1,336,000	1,845,000	10,704,330
		Cost	982,814	909,629	1,207,407	1,748,409	10,276,749
	Tule River Basins	New Work					
		Approp.	-15,000	242,000	-	-2,700	254,300
		Cost	2,085	214,422	27,718	78	252,216
	Upper Jordan River, CA	New Work					
		Approp.	-	-	-	-	1,576,000
		Cost	-	-	-	-	1,576,000
	West Sacramento CA	New Work					
		Approp.	-	-	-	-	1,817,000
		Cost	-	-	-	-	1,817,000
	Yuba River, CA	New Work					
		Approp	100,000	410,000	556,000	33,860	1,149,860
		Cost	39,197	457,007	454,524	146,949	960,583
		New Work					
		Contrib	-	-	30,000	50,000	80,000
		Cost	-	-	19,434	24,838	44,272

1. Beginning in FY 1982, Advance Engineering and Design (Preconstruction, Engineering and Design) programs are funded under General Investigations Appropriations.

2. Includes FY 1985 unobligated carryover and FY 1986 allocation for CP&E funds and all AE&D funds to be included in project cost (for cost sharing) per TWX of September 9, 1985.

3. Excludes \$2,639,955 funds and costs for a previous flood control project on Napa River. (See Table 35-E).

**SACRAMENTO, CA DISTRICT**

**TABLE 35-B (Cont'd)**

**AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
<b>1. SACRAMENTO RIVER, CA</b>			
	Mar 3, 1899	A depth of 7 feet below Sacramento works.	H. Doc. 186, 55th Cong., 2d sess., and 48 55th Cong., 3d sess. (Annual Report 1898, p. 2844 and 1899, p. 3171).
	July 25, 1912	For work above Sacramento.	H. Doc. 76, 62d Cong., 1st sess. 1
	Jan 21, 1927	The 10-foot channel up to Sacramento	H. Doc. 123, 69th cong., 1st sess. Rivers and Harbors Committee Doc. 35, 73d Cong., 2d sess.
	Aug 30, 1935	A depth of 6 feet between Sacramento and Colusa and 5 feet between Colusa and Chico Landing at a cost of \$390,000 provided flow of rivers is increased to minimum flow of 5,000 cubic feet per second after Shasta Reservoir is built.	Rivers and Harbors Committee Doc 35, 73d Cong., 2d sess.
	Aug 30, 1935	Authority for a special direct participation of Federal Government of \$12 million in cost of Shasta Reservoir.	S. Doc. 142, 79th Cong., 2d sess.
	Aug 26, 1937	Transfer of authority for expenditure of above \$12 million from Secretary of War to Secretary of the Interior.	
	July 24, 1946	Modified existing navigation project for Sacramento River, CA, to provide for construction of a ship channel 30 feet deep and 200 to 300 feet wide from deep water in Suisun Bay to Washington Lake, including such works as may be necessary to compensate for or alleviate any detrimental salinity conditions resulting from ship channel; a triangular basin of equal depth, 2,400 by 2,000 by 3,400 feet at Washington Lake; and connecting channel 13 feet deep and 120 feet wide, with lock and drawbridge, thence to Sacramento River.	Sec. 1002, 1986 WRDA
	Nov 17, 1987	Deauthorization of shallow-draft channel, Colusa to Red Bluff, feature of project for navigation, Sacramento River, California.	

TABLE 35-B (Cont'd)

## AUTHORIZING LEGISLATION

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
	Dec 11, 2000	Reauthorization of Sacramento River, Major and Minor Tributaries and Chico Landing to Red Bluff, CA	
			Sec 350 (a) (1-2), WRDA 2000
10.		<b>CORTE MADERA CREEK, CA</b>	
	Oct 23, 1962	Levees and channel improvements, lower 11 miles of Corte Madera Creek and tributaries, as modified by Chief of Engineers.	H. Doc. 545, 87th Cong., 2d sess.
	Nov 7, 1966	Local cooperation requirements modified to provide 1.5 percent cash contribution toward cost of Ross Valley unit.	Sec. 204, 1966 Flood Control Act.
	Nov 17, 1986	Modify existing project to direct construction of Unit 4 from Lagunitas Road Bridge to Sir Francis Drake Boulevard, and to include construction of flood-proofing measures in vicinity of Lagunitas Road Bridge to insure proper functioning of completed portions of authorized project. Further modify project to eliminate any channel modifications upstream of Sir Francis Drake Boulevard.	Sec 823, 1986 WRDA
23.		<b>RUSSIAN RIVER BASIN, CA</b>	
	May 17, 1950	Coyote Valley Dam (Lake Mendocino): Channel improvements on lower 98 miles of Russian River and lower reaches of tributaries.	H. Doc. 585, 81st Cong., 2d sess.
	Feb 10, 1956	Increased appropriation authorization for initial stage of project development.	PL 404, 84th cong., 2d sess.
	Oct 23, 1962	Dry Creek (Warm Springs) Lake: Channel Improvements on Dry Creek below dam.	H. Doc. 547, 87th Cong., 2d sess.
	Mar 7, 1974	Dry Creek (Warm Springs) Lake and channel; compensate for fish losses on the Russian River which may be attributed to the operation of the Coyote Dam component of the project through measures such as possible expansion of the capacity of the fish hatchery at the Warm Springs Dam component of the project.	Sec. 95, 1974 WRDA
24.		<b>SACRAMENTO RIVER AND TRIBUTARIES, CA, FROM COLLINSVILLE TO SHASTA DAM</b>	
	Dec 22, 1944	Modify Sacramento River Flood Control Project	H. Doc. 649, 78th Cong.,



SACRAMENTO, CA DISTRICT

**TABLE 35-B (Cont'd)**

**AUTHORIZING LEGISLATION**

See Section in Text	Date Authorizing Act	Project and Work Authorized	Documents
		to provide for extensions in levees and other structures along Sacramento River and major and minor tributaries; construct Black Butte Dam and Reservoir; construct low-level Table Mountain Dam and Reservoir with power facilities; and provision of monetary authorization of \$15 million for initiation of modification.	2d sess. <sup>2</sup>
	May 17, 1950	Improvements for protection of Upper Butte Basin (included full monetary authorization).	H. Doc. 3667, 81st cong., 1st sess. <sup>2</sup>
	Jul 3, 1958	Extend existing Sacramento River Flood Control Project to Keswick Dam for purposes of zoning area below dam and modification of project by construction of bank protection and incidental channel improvements between Chico Landing and Red Bluff (included full monetary authorization).	H. Doc. 272, 84th Cong., 2d sess. <sup>2</sup>
	Jul 3, 1958	Additional authorization of \$17 million for comprehensive plan approved in act of December 22, 1944.	
	Jul 14, 1960	Further modification of Sacramento River Flood Control Project by construction of initial 10-year phase of bank erosion control works and setback levees on Sacramento River and authorization of \$14,240,000 for prosecution of modification.	S. Doc. 103, 80th Cong.,
	May 12, 1967	Additional authorization of \$7 million for bank protection approved in act of July 14, 1960.	PL 90-17
	Mar 7, 1974	Initiation of construction of second phase of bank erosion control works and setback levees on Sacramento River as approved in act of July 14, 1960, and additional authorization of \$16 million for such purpose. <sup>3</sup>	PL 93-251
	Jun 19, 1975	Deauthorization of Table Mountain Dam and Reservoir. <sup>4</sup>	H. Doc. 94-192, 94th Cong., 1st sess.

**TABLE 35-C OTHER AUTHORIZED NAVIGATION PROJECTS**

Project	Status	For Last	Construction	Cost to Sep. 30, 2002
		Full Report See Annual Report For		Operation and Maintenance
Feather River, CA		1951	-	\$ 5,752 <sup>1 2</sup>
Middle River and Connecting Channels, CA	Completed	1974	\$ 8,354 <sub>3</sub> 8,500	93,494
Mokelumne River, CA	Completed	1974	2,132 <sub>5 6</sub>	189,152
Navajo Reservoir, NM	Completed	-	-	-
Old River, CA	Completed	1970	23,185 <sub>7</sub>	-
Stockton and Mormon Channels, CA	Completed	1970	253,151 <sub>8</sub>	9,631,128
Suisun Bay Channel, CA	Completed	1974	200,928 <sub>9 10 11</sub>	218,854
Suisun Channel, CA	Completed	1973	217,677	3,316,622 <sup>12 13</sup>
Suisun Point Channel, CA	Completed	1965	191,728 <sub>5 15</sub>	733,489
				-

1. Maintenance project, channels adequate for commerce.

2. Includes \$10 for maintenance for previous project. Excludes \$6,160 for previous project and \$3,840 for existing project for maintenance expended from contributed funds.

3. Includes \$1,600 for previous project.

4. Includes \$790 for previous project.

5. Authorized by Chief of Engineers under authority of sec. 107, Public Law 86-645, as amended.

6. All costs transferred from Los Angeles District in FY 1968.

7. Estimated cost to local interests was \$3,6000 for lands, damages and public landings. Remaining portion of project, consisting of side channel at Orwood and completion of project channels from mouth of Old River to Lammers Ferry road and from Crocker Cut to Holly Sugar Factory was deauthorized November 17, 1986, by WRDA of 1986.

8. Upon completion of Mormon Slough, Calaveras River, CA in February 1970, local interests accepted maintenance responsibility for Mormon

Slough as well as for Stockton and Mormon Channels CA, and Federal maintenance was discontinued. No Federal maintenance costs have been incurred since FY 1969.

9. Includes \$58,901 for previous project.

10. Excludes \$59,551 expended from required contributed funds for previous project.

11. Excludes work accomplished under existing project at a cost of \$207,198 from Public Works Administration funds allotted to San Joaquin River, CA.

12. Includes \$59,817 for previous projects. Excludes \$5,449 expended from required contributed funds for previous project.

13. Maintenance responsibility transferred to San Francisco District, January 1, 1974.

14. Includes reconnaissance and condition surveys of \$5,496 and \$483 for fiscal year 1963 and 1964, respectively.

15. Estimated cost (July 1964) to local interests was \$12,000 for lands, damages, and spoil retention dikes.

**SACRAMENTO, CA DISTRICT**

**TABLE 35-E OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	Status	For Last	Construction	Cost to Sep. 30, 2003		
		Full Report See Annual Report For		Operation and Maintenance		
Alameda Creek, CA	Completed	1978	\$26,995,350		\$54,778	<sup>1 2</sup>
American River, CA	Completed	1959	2,125,818	<sup>3</sup>	-	
Aquatic Plant Control, CA	Completed	1967	1,000		-	
Big Dry Creek Dam and Diversion, CA	Completed	1955	1,369,931	<sup>4</sup>	-	
Big Wash, Milford, Beaver County, UT	Completed	1961	217,879	<sup>5 6</sup>	-	
Burch Creek, Weber County, UT		1964	26,049	<sup>5</sup>	-	
Cache Creek Basin, CA (Outlet Channel)	Active	1993		<sup>7</sup>	-	
Chester, CA	Active	1981	3,570,000	<sup>8</sup>	-	
Cottonwood Creek, CA	Active	1991	15,765,000		-	
Coyote Creek, CA	Completed	1968	705,622	<sup>1 5</sup>	-	
Duck Creek, San Joaquin County, CA	Completed	1967	664,825	<sup>5 9</sup>	-	
East Weaver Creek, CA	Completed	1965	220,636	<sup>1 5 10</sup>	-	
Folsom Lake, American River, CA Completed		1957	63,014,810	<sup>11</sup>	-	
Green Valley Creek, Solano County, CA	Completed	1963	136,026	<sup>5 12</sup>	-	
Kays Creek, UT	Completed	1973	407,989	<sup>5 13</sup>	-	
Kern River-California Aqueduct Intertie, CA	Completed	1977	1,503,073	<sup>5 14</sup>	-	
Klamath River, CA	Completed	1972	4,838,000	<sup>5</sup>	-	
Lake Camanche, CA	Completed	1976	10,252,950	<sup>15</sup>	-	
Lake Oroville, CA	Completed	1981	70,425,470	<sup>16</sup>	-	
Lower San Joaquin River and Tributaries, including Tuolumne and Stanislaus Rivers, CA	Completed	1976	27,835,263	<sup>17</sup>	-	
Marysville Lake, CA	Active	1980	-	<sup>17</sup>	-	
Merced River, CA	Completed	1976	10,918,796	<sup>19</sup>	-	
Middle Creek, CA	Completed	1967	2,643,499	<sup>20</sup>	-	
Mormon Slough, CA	Completed	1976	2,965,402	<sup>21</sup>	-	
Napa River Basin, CA	Active	1979	2,639,955	<sup>1 22</sup>	-	
New Bullards Bar, CA	Completed	1972	12,890,625	<sup>23</sup>	-	
North Fork, Pit River at Alturas, CA	Completed	1972	904,278	<sup>5 24 25</sup>	-	
Pinole Creek, CA	Completed	1968	885,750	<sup>1 5</sup>	-	
Redwood Creek, Humboldt County, CA	Completed	1970	4,620,070	<sup>1 26</sup>	-	
Reese River, Battle Mountain, NV	Completed	1969	133,339	<sup>5 27</sup>	-	

TABLE 35-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS

Project	Status	For Last Full Report See Annual Report For	Construction	Cost to Sep. 30, 2002		
				Operation and Maintenance		
Rheem Creek, CA	Completed	1962	400,000	<sup>1 5 28</sup>	-	
Rodeo Creek, CA	Completed	1966	974,100	<sup>1 5</sup>	-	
Salinas River, CA	Inactive	1952	94,213	<sup>1 29</sup>	-	
Salt Lake City, Jordan River, UT	Completed	1961	1,227,570	<sup>30</sup>	-	
San Leandro Creek, CA	Completed	1973	1,000,000	<sup>1 31</sup>	-	
San Lorenzo Creek, CA	Completed	1962	5,130,821	<sup>1 32</sup>	-	
San Lorenzo River, CA	Completed	1966	4,314,406	<sup>1 33</sup>	-	
Sevier River near Redmond, UT	Completed	1952	919,000	<sup>1 34</sup>	-	
Sonoma Creek, CA	Inactive	1973	781,500	<sup>1 35</sup>	-	
Truckee River and Tributaries, CA and NV	Active	1968	1,038,960		-	

**TABLE 35-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

1. Project responsibility transferred from San Francisco District to Sacramento District April 1, 1982.

2. Scheduling of reservoir operations costs.

3. Excludes \$54,919 other contributed funds for miscellaneous construction for local interests pursuant to requirements of local cooperation were \$951,000 (1959) for lands and relocations.

4. Excludes \$44,008 other contributed funds for construction in connection with bridge construction pursuant to requirements of local cooperation. Total cost to local interests for all requirements of local cooperation was \$370,000 (9159) for lands and relocations.

5. Authorized by Chief of Engineers under authority of sec. 205, Public Law 80-858, as amended.

6. Excludes \$22,000 for preauthorization studies.

7. Project not economically feasible; preconstruction planning was terminated in FY 1993.

8. Excludes \$69,262 other contributed funds from State of California for two low water crossings and appurtenances at Chester. A fish ladder modification project was continued under sec. 1135 in FY 2001 at fiscal year cost of \$38,765.

9. Excludes \$50,000 for preauthorization studies. Estimated costs to local interests were \$665,000 for lands and damages including relocations.

10. Includes \$174,938 Public Works Acceleration Program Funds.

11. Transferred to Bureau of Reclamation in May 1956 for operation and maintenance by that agency in conjunction with other units of Central Valley project.

12. Excludes \$20,000 for preauthorization studies.

13. Includes \$30,000 for preauthorization studies. Estimated costs (FY 1973) to local interest for all requirements of local cooperation were \$150,117 for lands and damages including relocation.

14. Includes \$73,000 for preauthorization studies. Non-Federal (Kern County Water Agency) cost for road relocation was \$18,260 (required contributed funds).

15. Constructed by East Bay Municipal Utility District. Final Federal contribution of \$51,202 made July 18, 1978 (total \$10,111,684). Non-Federal costs \$34,988,53616.

16. Constructed by State of California. Final Federal contribution of \$64,186 was made on

February 9, 1981 (total \$69,994,105) for flood control reservation.

17. Cherry Valley and New don Pedro Reservoirs constructed by local interests. Federal contribution of \$9,000,000 and \$5,464,000, respectively, for flood control reservation. Final Federal contribution of \$308,898 was made on January 18, 1972, for New don Pedro. Excludes \$3,004,946, contributed funds, other, for miscellaneous engineering and construction (non-project) at local interest expense under local cooperation requirements for acquisition of rights-of-way for levee and channel improvement on Lower San Joaquin River and Tributaries. Unconstructed portion of snagging and clearing project modification of Lower San Joaquin River and Tributaries) was classified as "deferred" on April 9, 1993. For full report see Annual Report for FY 1993.

18. Planning and any future development is uncertain awaiting State of California's position on support of Marysville project.

19. Constructed by Merced Irrigation District, Final Federal contribution of \$839 was made December 2, 1975 (total \$10,818,638) for flood control reservation.

20. Estimated costs (FY 1967) to local interests for all requirements of local cooperation were \$1,340,000 for lands and damages including relocation.

21. Non-Federal cost \$2,965,402 (FY1976) for lands and relocations. Federal contribution of \$599,336 made to State Reclamation Board.

22. This project was reclassified as "active" on August 3, 1987.

23. Constructed by Yuba County Water Agency. Final Federal contribution of \$33,470 was made in FY 1972 (total \$12,759,127) for flood control reservation.

24. Includes \$41,800 for preauthorization studies.

25. Excludes \$146,000 other contributed funds for miscellaneous construction and engineering and design services under local cooperation requirements in connection with acquisition of rights-of-way, relocation and utility alterations.

26. Includes \$107,000 costs for remedial work to drainage system completed in FY 1977.

27. Includes \$52,549 contributed funds.

29. Cost includes engineering and design prior to June 30, 1952 and costs of \$4,288 (FY 1962-1963) to

**TABLE 35-E (Cont'd) OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

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determine if project classification to an active category was justified.

30. Estimated cost to local interest for all requirements of local cooperation were \$463,000 (July 1962) for lands and damages including relocations. Project prevented \$4,544,000 in damages from the April-May 1994 snowmelt runoff.

31. Excludes \$285,329 contributed funds.

32. Excludes \$200,000 estimated value of work performed in lieu of cash contribution.

33. Excludes \$421,182 contributed funds.

34. Excludes \$48,000 required contributed funds toward first cost. Costs to local interests for all requirements of local cooperation, including required contributions, were \$118,000 (1951). Project prevented \$9,000 in damages from the April-May 1994 snowmelt runoff.

35. Place inactive 1974.

SACRAMENTO, CA DISTRICT

**TABLE 35-G**

**DEAUTHORIZED PROJECTS**

Project	For Last Full Report See Annual Report For	Date Deauthorized	Federal Funds Expended	Contributed Funds Expended
Alhambra Creek, CA	1981	1986	\$300,000	-
Bear River, CA	1980	1986	-	-
Cottonwood Creek	1991	1998	15,765,000	- 2/
Eel River, CA	1971	1986	1,272,816	-
Gleason Creek, NV	1977	1986	215,826	-
Humboldt River and and Tributaries, NV	1982	1986	1,532,932	-
Lakeport Lake, CA 1	1976	1993	2,353,000	-
Little Valley Wash, Magna, UT	1951	1977	-	-
Lower San Joaquin River and Tributaries, CA	1993	1998	27,835,263	- 2/
Mad River Basin, CA	1973	1986	4,243,750	-
Spanish Fork River, UT	1955	1977	20,000	-
Weber River and Tributaries, UT (Morgan County)	1974	1972	75,120	-
Wildcat and San Pablo Creek Reach 2, CA	1997	1998	-	-

1. Lakeport Lake was deauthorized on November 17, 1988; and deauthorized November 18, 1993.
2. Requested reauthorization March 2001.

**TABLE 35-H** **SACRAMENTO RIVER, CA:**  
**TIDAL AND FLOOD CONDITIONS PREVAILING**  
**(See Section 1 of Text)**

Place	Miles from Mouth of River	Range in Feet			
		Mean Tidal <sub>1</sub>	Extreme Tidal <sub>2</sub>	Ordinary Flood <sub>3</sub>	Extreme Flood <sub>4</sub>
Collinsville	0	4.3	7	8	10
Sacramento	59	2.0 <sub>2</sub>	3	20	28
Verona (Mouth of Feather River)	80	-	Trace	22	30
Colusa	144	-	-	26	32
Chico Landing	193	-	-	20	25
Red Bluff	248	-	-	24	30

1. Mean lower low water to mean higher high water.

2. Tide at low water season only.

3. Mean lower low water to flood stage.

4. Extreme low water to indicated flood condition.

**TABLE 35-I** **SAN JOAQUIN RIVER, CA:**  
**TOTAL COST OF NEW WORK FOR PROJECT <sub>1</sub>**  
**(See Section 4 of Text)**

Modification	Federal			Non-Federal <sub>2</sub>		
	Corps of Engineers (Construction)	Coast Guard (Construction)	Required Cash Contribution	Lands and Damages (includ- ing Relocations)	Total	Total Project
Prior to 1950						
Modification	\$4,009,938	\$80,000	\$1,307,500	\$1,042,000	\$2,349,500	\$6,439,438
1950 Modification	1,823,179	-	35,000	135,00	170,000	1,993,170
Total	5,833,117	80,000	1,342,500	1,177,000	2,519,500	8,432,617

1. Completed in May 1960.

2. Excludes \$5,865,000 (Feb 1954) local interests costs for Stockton Deep Water Channel terminal facilities required under terms of project authorization.



**SACRAMENTO, CA DISTRICT**

**TABLE 35-J** **SAN JOAQUIN RIVER, CA:**  
**PROJECT UNITS (1950 MODIFICATION) RECLASSIFIED AND**  
**EXCLUDED FROM PROJECT COST<sup>1</sup>**  
**(See Section 4 of Text)**

Unit	Federal Corps of Engineers	Required Cash Contributions	Non-Federal Lands and Damages (includ- ing Relocations)	Total	Total Project
Settling Basin above head of Burns Cutoff <sup>1</sup>	\$1,073,000	\$30,000	\$200,000	\$230,000	\$1,303,000
Burns Cutoff improvement; new turning basin; dredg- ing Mormon Channel <sup>2 5</sup>	7,882,000 <sup>3</sup>	431,000	1,455,000	1,886,000	9,768,000
Upper Stockton Channel enlargement <sup>4 5</sup>	535,000	34,000	15,000	49,000	584,000

1. July 1959 price index. Deauthorized August 5, 1977.

2. Deferred; July 1960 price index.

3. For lands and construction.

4. Deleted by 1965 River and Harbor Act authorization of San Francisco Bay to Stockton Channel, Sacramento District, Improvement No. 3.

5. Deauthorized November 17, 1986.

**TABLE 35-K** **MERCED COUNTY STREAM GROUP, CA**  
**MAXIMUM INFLOW, STORAGE, AND OUTFLOW FOR PROJECTS**  
**(See Section 19 of Text)**

Stream	Maximum Inflow (c.f.s.) (hourly)	Maximum Storage (acre-feet)	Maximum Outflow (c.f.s.)
Burns	1,287	140	884
Bear	1,372	252	838
Owens	149	19	48
Mariposa	2,775	1,491	526

**TABLE 35-N      SACRAMENTO RIVER AND TRIBUTARIES, CA,  
COLLINSVILLE TO SHASTA DAM:  
PROJECT UNITS RECLASSIFIED AND EXCLUDED FROM COST ESTIMATE  
(See Section 24 of Text)**

Unit	Current Classification	Federal	Estimated Cost Non-Federal <sup>1</sup>	Total
1944 Modification:				
Antelope Creek <sup>2</sup>	Inactive	\$1,400,000	\$340,000	\$1,740,000
Lower Butte Basin <sup>3</sup>	Deferred	7,286,000	2,285,000	9,571,000
Thomas Creek <sup>2</sup>	Deferred	1,140,000	140,000	1,280,000
Willow Creek <sup>2</sup>	Inactive	1,290,000	120,000	1,410,000
Bypass Levees <sup>4</sup>	Deferred	7,100,000	940,000	8,040,000
Bypass Levees <sup>4</sup>	Inactive	3,010,000	-	3,010,000
1950 Modification:				
Upper Butte Basin <sup>2</sup>	Deferred	3,530,000	1,787,000	5,317,000

1. For lands and damages, including relocation.

2. July 1960 price level.

3. Excludes work applicable to extension of Moulton weir (July 1954 price level).

4. July 1961 price level

**TABLE 35-P**                      **FLOOD CONTROL WORK UNDER SPECIAL  
AUTHORIZATION FLOOD CONTROL ACTIVITIES  
PURSUANT TO SECTION 205, PUBLIC LAW 80-858  
AS AMENDED (PREAUTHORIZATION)  
(See Section 32 of Text)**

Study	Stage	Fiscal Year Cost (Federal)
Contra Costa (Rock Slough), CA		\$ 14,283
Battle Mountain, NV	Plans and Specification	62,743
Galindo Creek, CA	Reconnaissance	37,577
Magpie and Don Julio Creeks, CA	Plans and Specifications	303,280
Mallard Slough, Pittsburgh CA	Reconnaissance	13,799
Miner's Ravine, CA	Reconnaissance	49,885
North Spanish Springs, NV	Reconnaissance/Feasibility	40,266
Reno Flood Warning System	Reconnaissance/Feasibility	125,756
Tehama, CA	Reconnaissance	<u>30,865</u>
		\$ 678,454 <sup>2</sup>

1. See Improvement No. 8 for construction.
2. Excludes Coordination Account. (\$11,082)

**TABLE 35-Q**                      **AQUATIC ECOSYSTEM RESTORATION**  
**(SECTION 206, PUBLIC LAW 104-303)**  
**(See Section 32 of Text)**

Study	Stage	Fiscal Year Cost (Federal)
Aspen, CO	Reconnaissance	\$9,521
Basalt, CO	Reconnaissance	246,144
Blackwood Creek, CA	Reconnaissance/Feasibility	146,726
Blue River, CO	Reconnaissance	53,606
Carson River City, NV	Reconnaissance	37,730
City Creek Ecosystem, Utah	Reconnaissance/Feasibility	101,724
Clear Lake Aquatic Plant Control	Reconnaissance	93
Delta Science Center at Big Break	Reconnaissance	40
Green river, UT	Reconnaissance/Feasibility	6,841
Hayden Diversion	Reconnaissance/Feasibility	233,542
Incline & 3 <sup>rd</sup> Creeks, NV	Reconnaissance/Feasibility	205,533
Lake Natoma		104,589
Lower Truckee River Paiute	Reconnaissance/Feasibility	7
Mill Creek, NV	Reconnaissance	7,561
Northfork Gunnison River, CO	Reconnaissance	306,736
Pacific Flyway, CA	Reconnaissance/Feasibility	234,538
Soldier Hollow, Utah	Reconnaissance/Feasibility	15,511
Sulfur Creek, CA	Reconnaissance	11,687
Turtle Bay, CA	Reconnaissance/Feasibility	206,970
Upper Jordan River Ecosystem Restoration	Reconnaissance/Feasibility	220,409
Ward Creek, CA	Reconnaissance	60
West Jordan River, Utah	Reconnaissance/Feasibility	<u>289,767</u>
		\$2,439,335 <sup>1</sup>

<sup>1</sup>. Excludes Coordination Accounts (\$18,873)

**TABLE 35-R**                      **SNAGGING AND CLEARING**  
**UNDER SPECIAL AUTHORIZATION**  
**PURSUANT TO (SECTION 208, 1954 FLOOD CONTROL ACT PUBLIC LAW 83-780)**

Study	Stage	Fiscal Year Cost (Federal)
San Joaquin River Firebaugh	Planning Design Analysis	\$ 1,318
Walker River, NV	Planning Design Analysis	<u>19</u>
		\$ 1,337

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SACRAMENTO, CA DISTRICT

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**TABLE 35-S**

**SURVEYS**  
**(See Section 37 of Text)**

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Fiscal year costs were as follows:

Navigation Studies	\$ 0
Flood Damage Prevention Studies	1,018,551
Required Cost Contributions	2,884,295
Non-Federal Contributions (not required)	-
Special Studies/Ecosystem Restoration	3,225,124
Review of Authorized Project	0
Special Investigations	40,122
Review of FERC Licenses	363
Interagency Water Resources Development	34,216
National Estuary Program	2,698
American Waterfowl Management Plan	850
Coordination with Other Water Resource Agencies	17,023
CAL-FED	181,242
Lake Tahoe Partnership	149,413
Planning Assistance to States	219,708

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**TABLE 35-T EMERGENCY STREAMBANK & SHORELINE PROTECTION**  
**(SECTION 14, 1946 FLOOD CONTROL ACT)**

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Study	Fiscal Year Cost (Federal)
Coordination Account	\$ 1,917

# SACRAMENTO, CA, DISTRICT

## PROJECTS SPECIFICALLY AUTHORIZED UNDER THE FORMER CALIFORNIA DEBRIS COMMISSION

The California Debris Commission, consisting of three Corps officers appointed by the President with the consent of the Senate, created by act of March 1, 1893 (27 Stat. L., p. 507), was organized in San Francisco, CA, on June 8, 1893, and has jurisdiction and duties extending over drainage area of Sacramento and San Joaquin Rivers, comprising great central valley of California and extending from crest of the Sierra Nevada on the east to that of the Coast Range on the west, and from Mount Shasta and Pit River Basin on the north to Tehachapi Mountains on the south. These rivers empty into head of Suisun Bay ultimately discharging into the Pacific Ocean through connecting bays and straits and the Golden Gate. Duties of the Commission comprise regulation of hydraulic mining in

drainage area of Sacramento and San Joaquin Rivers, CA, so that debris will not be carried into navigable waters or otherwise cause damage; jurisdiction over construction and control of water storage facilities for domestic, irrigation, and power development purposes; and direction of improvements for control of floods on Sacramento River. On November 19, 1986, the Commission was abolished by the Water Resources Development Act of 1986 (PL 99-662) and all authorities, powers, functions, and duties were transferred to the Secretary of the Army. All acquired lands and other interests presently under jurisdiction of the Commission were authorized to be retained and administered under direction of the Secretary.

## IMPROVEMENTS

Navigation	Page	Tables	Page
1. Regulation of Hydraulic Mining and Preparation of Plans . . . . .	35-1A	Table 35-AA	Cost and Financial Statement . . . . . 35-7A
2. Sacramento River and Tributaries, CA (debris control) . . . . .	35-2A	Table 35-BB	Authorizing Legislation . . . . . 35-10A
3. Treatment of Yuba River Debris Situation-Restraining Barriers, CA . . . . .	35-3A	Table 35-CC	Sacramento River, CA: Total Cost of Existing Project . . . 35-12A
<b>Flood Control</b>			
4. Sacramento River, CA . . . . .	35-4A		

### Navigation

#### 1. REGULATION OF HYDRAULIC MINING AND PREPARATION OF PLANS

**Location.** Operations largely limited to territory between Mount Lassen on the north and Yosemite Valley on the south, on western watershed of Sierra Nevada. (See Geological Survey sheets for the area, 25 in number.)

**Existing project.** Provided for regulating

hydraulic mining operations, planning improvement of conditions upon Sacramento and San Joaquin Rivers and their tributaries affected by such operations, and preparation of plans to enable hydraulic mining to be resumed in their drainage areas. In addition, the Secretary of the Army is authorized to enter into contracts to supply storage for water and use of outlet facilities from debris-storage reservoirs for domestic and irrigation purposes and power development upon such conditions of delivery, use, and payment as he may approve. Applications of prospective miners were fully investigated by the former California Debris Commission and permits to operate were issued to

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## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003

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those who provide satisfactory debris-restraining basins by construction of suitable dams where necessary or agree to make payment for storage in Government-constructed debris-restraining reservoirs constructed under act of June 19, 1934, as set forth below. For location and description of Government-constructed, debris-restraining reservoirs for general hydraulic mining, see Improvement 2.

**Local cooperation.** Mineowners bore all expenses incurred in complying with orders of the former Commission for regulation of mining and restraint of debris.

**Operations and results during fiscal year.** Minor administrative duties were accomplished. Administrative work overlaps that of improvements 2, 3, and 4, hereunder, and that of Sacramento District.

**Historical summary.** The former Commission received 1,292 applications for hydraulic mining licenses; 1 mine is licensed, but does not use storage behind Government debris dams. Work remaining is, in general, continuation of above or similar operations.

### 2. SACRAMENTO RIVER AND TRIBUTARIES, CA (DEBRIS CONTROL)

**Location.** Project reservoirs are to be constructed in watersheds of Yuba, Bear, and American Rivers, CA (See Geological Survey sheets for basin areas, seven in number.)

**Existing project.** For description of completed North Fork and Harry L. Englebright projects and authorizing act, see Annual Report for 1975. Initial recreation facilities were provided in FY 1959. Recreation areas at Harry L. Englebright Dam are maintained by the Corps. Recreation areas at North Fork Dam are no longer maintained and operated by Auburn Recreation Park and Parkway District, but have been turned over to the Bureau of Reclamation (known as the Water and Power Resources Service between November 6, 1979, and May 18, 1981) on a permit basis. Total Federal cost of new work for construction of these reservoirs was \$4,646,872, including \$40,000 and \$25,000, respectively, for basic recreation facilities at Englebright Dam and North Fork Dam. Reservoir project sites on Middle Fork of American River and on Bear River have been deauthorized and excluded from foregoing cost. The 90-day Congressional project

review period, required by Sec. 12, Public Law 93-251, as amended, ended August 5, 1977, and resulted in deauthorization of that portion of the project. Estimated cost of that portion is \$1,820,000 (1935).

**Local cooperation.** Fully complied with. Improvements made to facilities at North Fork Dam by Auburn Recreation Park and Parkway District under a lease agreement with the Secretary of the Army and Auburn Boat Clubs (concessionaire) at an estimated cost of \$46,000 since September 1953. On March 1, 1979, lands and waters at North Fork Dam were turned over to the Bureau of Reclamation on a 5-year renewable basis. Permit No. DACW05-4-79-527 was renewed for 5 years on March 1, 1984, March 1, 1989, and on March 1, 1994. Bureau will operate and maintain such use until Auburn project is completed, then a fee transfer will be made. Actual operation and maintenance of the recreation resource is being done by State of California by contract with the Bureau.

**Licenses.** Under provisions of Contract No. W-1105-eng-2998 with Pacific Gas and Electric Co., (PG&E) (a 1941 contract which expired July 31, 1991) payment was made to Federal Government of \$18,000 per year for first 30 years and \$48,000 per year for the next 20 years in return for use of head at Englebright Dam and generation of hydroelectric power. Total payment through September 30, 1999, amounts to \$1,767,109; these funds are now paid to the Secretary of the Army and deposited for return to the Treasury. PG&E has obtained a new license, Federal Energy Regulatory Commission License No. 1403-004, issued February 11, 1993, for continued operation of Narrows No. 1 Hydroelectric Project and has entered into a new storage agreement and an operation agreement with the Federal Government (Corps). Total payment of \$66,070 was received in FY 1994, but only \$48,000 was reallocated to the District. In FY 1995, \$18,070 was reallocated to the District. Payments under new agreement are effective as of Fiscal Year 1993 and will be 8.2 percent of previous fiscal year's total costs for operation and maintenance. License No. 2246, effective April 9, 1970 (date New Narrows power plant was put in operation) was issued by Federal Power Commission (known as the Federal Energy Regulatory Commission since January 9, 1978) to Yuba County Water Agency for hydroelectric power development of Yuba River by the company upstream from Englebright Dam. Under provisions of Contract No. DA-04-167-CIV-ENG-66-95 with Yuba County Water Agency, payment is to be made to the Federal

## SACRAMENTO, CA DISTRICT

Government of \$100,000 per year for no more than 50 years. First payment (partial) of \$73,151 was made April 1, 1971; total payment through September 30, 1997, amounts to \$2,509,066. These funds are paid to Sacramento District and deposited for return to the Treasury.

**Operations and results during fiscal year.** New work: Maintenance: Maintenance and operation activities continued at Harry L. Englebright Dam at a cost of \$1,271,000, including recreation facilities. Dam safety assurance studies at Englebright Dam have been completed.

**Historical summary.** Construction of dams was initiated in 1937; North Fork project was completed and in use at end of FY 1939, and Harry L. Englebright project was completed in January 1941. The two debris-control structures are in good condition. Public use of these reservoir recreation areas greatly overtakes present capacities. Dam safety assurance studies were initiated at Englebright Dam in FY 1981 and were completed in FY 1987.

### 3. TREATMENT OF YUBA RIVER DEBRIS SITUATION-RESTRAINING BARRIERS, CA

**Location.** Works are on Yuba River between Marysville and where the river emerges from the foothills, near Hammonton, some 10 miles easterly from Marysville, or about 9 miles below the Narrows. (See Geological Survey Topographic map of Sacramento Valley, CA.)

**Existing project.** For description of completed project and authorizing act, see Annual Report for 1975. Total cost of new work was \$723,259, of which \$361,482 was U.S. funds and \$361,777 required contributed funds by State of California. (For details of project in its original form, see Annual Report, 1917, p. 1810.) In February 1963, center section of dam failed and major rehabilitation of structure was completed in December 1964. Total cost for required rehabilitation was \$1,660,000, of which \$830,000 was Federal cost and \$830,000 required contribution by State of California toward rehabilitation cost. During the December 24, 1964, floodflows on the Yuba River, the rehabilitated Daguerre Point Dam sustained considerable damage. (See 1965 Annual Report, p. 1647 "Operations and results during fiscal year.") The reconstructed portion of the dam completed earlier in December 1964 was undamaged by the flood.

Permanent repair of Daguerre Point Dam abutment and fish facilities was completed in October 1965 at a cost of \$447,808 with Federal and required State contributed funds on a matching basis.

**Local cooperation.** Fully complied with for new work and major rehabilitation work. Total first cost to local interests for new work was \$361,777 (required contribution by State of California). In addition, training walls were built on each bank below Daguerre Point for 11,250 feet and just above Daguerre Point, on the south bank, for 11,000 linear feet by two gold-dredging companies in connection with their dredging operations. To build these training walls would have cost the United States \$450,000 (1902 estimate). Flood channels were also built by gold-dredging companies within confines of project works. Cost to the United States of equally effective works to restrain debris movement would have been more than \$776,000 (1926 estimate). Total costs to local interests for initial and permanent major rehabilitation works were \$830,000 and \$223,904, respectively, (required contribution by State of California). State of California must contribute annually an amount equal to the Federal allotment for maintenance.

**Operations and results during fiscal year.** Maintenance: Operations consisted of condition and operation studies by hired labor on Yuba River.

**Historical summary.** Construction of project works was initiated in November 1902. Construction of Daguerre Point Dam was completed in May 1906; diversion of river over dam was completed in 1910; training walls and dikes were completed in 1935. About 149 million cubic yards of debris are held in lower 7 miles of Yuba River between Marysville and downstream end of training walls. About 20 million cubic feet, are confined in river channel by Daguerre Point Dam. Additional millions of yards of loose material are in mine tailing fields adjacent to project training walls in upper 7-mile reach of project. Initial rehabilitation of Daguerre Point Dam begun in July 1963 was completed in December 1964. Contract for permanent rehabilitation of structure was initiated in July and completed in October 1965.



## Flood Control

### 4. SACRAMENTO RIVER, CA

**Location.** Works covered by this improvement are on Sacramento River and tributaries in north-central California from Collinsville to Ordbend, a distance of 184 miles.

**Previous project.** For details see page 1815 of Annual Report for 1917, page 1995 of Annual Report for 1938, and page 2262 of Annual Report for 1907.

**Existing project.** Sacramento River flood control project is a comprehensive plan of flood control for Sacramento River and lower reaches of its principal tributaries. Improvement extends along Sacramento River from Ordbend in Glenn County, CA, 184 miles downstream to its mouth at Collinsville at upper end of Suisun Bay, and comprises a system of levees, overflow weirs, drainage pumping plants, and flood bypass channels or floodways designed to carry surplus floodwaters without inundation of valley lands. About 980 miles of levee construction, with an average height of 15 feet and 98 miles of bank protection are involved in project. For further details, see Annual Report for 1962, page 2115. (See table 35-BB for authorizing legislation.)

Estimated (October 1987) cost for original project (exclusive of supplemental levee improvements), including new work and maintenance, is \$163,925,000 of which \$68,925,000 is Federal cost and \$95 million non-Federal (\$90,050,562 for lands and damages and relocations and \$4,949,438 required contributed funds for levee construction, bank protection works, and levee setbacks). Of this amount, \$4,939,752 was for new work and \$9,686 for maintenance. Estimated October 1996 total project cost is \$171,950,000, of which \$76,322,000 is Federal and \$95,628,000 is non-Federal. Total estimate now includes remedial levee work for Yolo Bypass and Cache Slough (Unit 109) and land acquisition for Little Holland Tract as hydraulic and environmental mitigation in potential projects impacting stages of the Sacramento River, but excludes Sacramento Urban Area; Marysville/Yuba City Area; Mid-Valley Area; Lower Sacramento Area; and Upper Sacramento Area Levee Reconstruction Projects. Colusa Basin Drain and Knights Landing (West Levee) are not incrementally economically feasible, but these sites have been transferred to Upper Sacramento Area. Knights Landing (East Levee) has been included with

Mid-Valley Area. In addition to project requirements, local interests constructed several pumping plants for drainage of agricultural and urban land protected by project levees. Some channel clearing work was accomplished by State of California and other local interests to supplement project levee construction. Dredging below Cache Slough and reconstruction of Cache Creek settling basin weir are considered deferred and excluded from foregoing cost estimate. Estimated cost (July 1962) of these project units is \$2,560,000 and \$520,000, respectively, a total of \$3,080,000 plus U.S. costs, for construction. Operation and maintenance of completed project will be responsibility of local interests; as units of project are completed, they are transferred to agencies of State of California for operation and maintenance. Existing project was adopted by 1917 Flood Control Act (H. Doc 81, 62d Cong., 1st sess., as modified by Rivers and Harbors Committee Doc. 5, 63d Cong., 1st sess.), 1928 Flood Control Act (S. Doc. 23, 69th Cong., 1st sess.), River and Harbor Act of 1937 (S. Committee print 75th Cong., 1st sess.), and 1941 Flood Control Act (H. Doc. 205, 77th Cong., 1st sess.).

Phase I - Sacramento River Flood Control System Evaluation recommended reconstruction of 32 miles of Sacramento area levees. Report was approved and in March 1989, Sacramento Urban Area Levee Reconstruction project was established under authority of Sacramento River Flood Control Project. New project is located within boundaries of Sacramento River Flood Control System in highly urbanized area around city of Sacramento, near confluence of Sacramento and American Rivers. It includes reconstructing the Left Bank levees of the Sacramento River from the Natomas Cross Canal to the Freeport Bridge by installing 17.1 miles of slurry wall, 5.7 miles of stability berm and drainage blanket, and reconstructing 2.0 miles of flood walls. It also includes reconstructing the Right Bank levees of the Sacramento River from the Barge Canal to Riverview by constructing 2.7 miles of stability berm and drain blanket, restoring levee cross-section for 1.0 mile, and developing about 123 acres of fish and wildlife mitigation. Estimated (October 2003) cost for Sacramento Urban project is \$42,900,000 of which \$28,215,000 is Federal and \$14,685,000 is non-Federal (including a cash contribution of \$2,135,000).

Sacramento River Flood Control Project (Glenn-Colusa Irrigation District) (G.C.I.D.) is part of the fishery/irrigation enhancement project being

## SACRAMENTO, CA DISTRICT

developed by G.C.I.D. Project is located between River Mile 202 and 206 on Sacramento River near the Glenn-Tehama county line, about 100 miles north of Sacramento, California. The Corps riffle restoration project includes multiple sheet pile revetments coupled with a stone grade to replicate natural riffle and bank protection to restore river hydraulic gradient to pre-1970 conditions. This will stabilize river hydraulics. Estimated (October 2003) project cost is \$31,130,000, of which \$330,000 is Federal and \$7,800,000 is non-Federal. Project was established under authority of the 1917 Sacramento River Flood Control Project (see Energy and Water Development Appropriations Act of 1990 and Water Resources Development Act of 1996 and 1999).

Phase II - Marysville/Yuba City Area Levee Reconstruction. Project is located within boundaries of the Sacramento River Flood Control System in Butte, Sutter and Yuba counties in north-central California. Area includes Feather and Yuba Rivers and their tributaries, Sutter Bypass, cities of Marysville and Yuba City and communities of Linda and Olivehurst. An evaluation of about 134 miles of Sacramento River Flood Control Project levees in Marysville/Yuba City area identified about 30 miles of levees as being structurally unstable. Project consists of reconstructing those levees by installing about 9 miles of slurry cut-off wall, 11 miles of toe drain and stability berm, 1 mile of seepage blanket, 1 mile of relief wells, 6 miles of levee freeboard restoration, 1 mile of irrigation ditch relocation, relocation of drainage pump station, and develop about 76 acres for fish and wildlife mitigation. Estimated (October 2002) project cost is \$49,700,000, of which \$37,300,000 is Federal and \$12,400,000 is non-Federal (including a cash contribution of \$4,600,000). Project was established under authority of Sacramento River Flood Control Project.

Phase III - Mid-Valley Area Levee Reconstruction. Project is located within the boundaries of the Sacramento River Flood Control System in Placer, Solano, Sutter, Yolo and Yuba Counties in north-central California. Area includes the Sacramento and Feather Rivers, Knights Landing Ridge Cut, Sutter and Yolo Bypasses and portions of the Bear River including Yankee Slough, Dry, Cache, Putah Creeks and the Natomas Cross Canal. Communities in the area include Knights Landing, Robbins, Davis and Woodland. An evaluation of about 240 miles of the Sacramento River Flood Control Project levees in the Mid-Valley area identified about 18 miles of levees that are structurally deficient. Project consists of

reconstructing about 18 miles of levees by installing about 15.1 miles of slurry walls, replacement of 1.2 miles of unsuitable levee embankment on landside, relocation of drainage ditches, restoration of levee height, and developing about 17 acres of fish and wildlife mitigation. Estimated (October 2002) project cost is \$33,400,000, of which \$25,110,000 is Federal and \$8,290,000 is non-Federal (including a cash contribution of \$2,330,000). Project was established under authority of the Sacramento River Flood Control Project.

Phase IV - Lower Sacramento Area Levee Reconstruction. Project is located within the boundaries of the Sacramento River Flood Control System in Sacramento, Solano, and Yolo Counties in north-central California. Area includes the lower Sacramento River and its distributary sloughs and the city of Clarksburg. An evaluation of about 295 miles of the Sacramento River Flood Control Project levees in the Lower Sacramento area identified about 47 miles of levees that are structurally deficient. Project consists of reconstructing about 2.6 miles of levees by installing landside berms with toe drains, backfilling of existing drainage collector systems, slurry cut-off walls, the restoration of levee height, and developing land for about 2 acres of fish and wildlife mitigation. Estimated (October 2002) project cost is \$5,190,000, of which \$3,930,000 is Federal and \$1,260,000 is non-Federal (including a cash contribution of \$660,000). Project was established under authority of Sacramento River Flood Control Project.

Phase V - Upper Sacramento Area Levee Reconstruction. Project is located within the boundaries of the Sacramento River Flood System in Colusa, Glenn, Sutter, and Yolo Counties in north-central California. Area includes the upper Sacramento River and its tributaries and the city of Colusa. An evaluation of about 350 miles of the Sacramento River Flood Control Project levees in the Upper Sacramento area identified about 12 miles of levees that are structurally deficient. Project consists of reconstruction of about 3.7 miles of levees by installing landside berms with toe drains, slurry cut-off walls, the restoration of levee height, and developing land for about 1.0 acres of fish and wildlife mitigation. Estimated October 2002 project cost is \$10,400,000, of which \$7,800,000 is Federal and \$2,600,000 is non-Federal (including a cash contribution of \$1,340,000). Project was established under authority of Sacramento River Flood Control Project.

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## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003

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**Operations and results during fiscal year.** New work: (a) Sacramento Urban Area Levee Reconstruction: Construction is complete, however, final payment and contract close-out activities remain. (b) Sacramento River Flood Control Project (Glenn Colusa Irrigation District (G.C.I.D.)): Construction was completed on riffle restoration on Sacramento River including building of multiple sheet piles coupled with stone to replicate natural riffle and bank protection to restore river hydraulic gradient to approximate pre-1970 conditions. Concurrently, GCID, The Bureau of Reclamation and the State of California are designing a project to build new screens near GCID pumping facilities. Subsequent to original authority in FY90 EWDA, sponsor selected a flat screen design and determined that a larger gradient facility was required for proper operation of the fish screens. As a result, an LRR and ROD for the larger facility was approved in April 1998. Plans and specs were initiated in January 1999. The Project Cooperation Agreement was executed in December 1999. The Gradient Facility construction contract was awarded in February 2000. The mitigation contract was awarded August 2002. (c) Marysville/Yuba City Area Levee Reconstruction: Scheduled construction activities are 90% complete. Design activities associated with extension of Site 7 were completed in May 2003 and the construction contract was awarded in September 2003. (d) Mid-Valley Area Levee Reconstruction: Construction for Area 1 is essentially complete. Engineering continued for the second Project Cooperation Agreement for Areas 2, 3 and 4. (e) Lower Sacramento Area Levee Reconstruction: Engineering continued. LRR updating the economic justification for Sites 2 and 3 was completed in November 2002. Construction of Site 2 was completed in October 2003. (f) Upper Sacramento Area Levee Reconstruction: Engineering continued. In accordance with Section 215 agreement signed September 22, 1997, local sponsor constructed 1,000 lineal feet of seepage/stability berm along the Sacramento River (Site E). LRR updating the economic justification for the project was completed in September 2002. Contract for construction of Site D

was awarded September 2002. Contract for first phase of construction at Site E was awarded in September 2003.

**Historical summary.** Construction of existing project began in FY 1918 and is about 99 percent complete. Channel improvement to date has produced a channel with a capacity of 579,000 cubic feet per second in Sacramento River below Cache Slough. In addition, discharges up to 21,000 cubic feet per second can be diverted from Sacramento River through Georgiana Slough. Completed major project items include about 977 miles of levees; five weirs with a combined discharge capacity of 602,000 cubic feet per second; two cutoff channels; two sets of outfall gates; channel improvement and clearing in Sacramento River, Butte Creek, Putah Creek, and Sutter and Tisdale Bypasses; construction of two main bypasses or floodways and secondary bypasses at Tisdale and Sacramento weirs and at Wadsworth Canal; construction of Knights Landing ridge cut and of Cache Creek settling basin; installation of gauging stations; and enlargement of Sacramento River below Cache Slough. Cutoffs at Collins Eddy and between Wild Irishman and Kinneys Bends were made in 1918 and 1919, respectively. Sacramento weir was completed in 1917, Fremont weir in 1924, Tisdale and Moulton weirs in 1932, and Colusa weir in 1933. Outfall gates at Knights Landing were constructed in 1930 and at mouth of Butte Slough in 1936. Pumping plants on Sutter Bypass were completed in 1944. Work items with reference to clearing, snagging, rectification of channels, and bank protection on Sacramento River and tributaries in Tehama County and from Red Bluff southerly, provided for by 1941 Flood Control Act were accomplished in fiscal years 1947, 1948, 1949, and 1951. Yolo Bypass and Cache Slough (Unit 109) was completed in 1990. Work remaining comprises completion of levee stage construction Mid-Valley Area; Lower Sacramento Area; and Upper Sacramento Area Levees. (See Table 35-CC for total cost of existing project to September 30, 1996.)

**SACRAMENTO, CA DISTRICT**

**TABLE 35-A COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sept. 30, 2003
1.	Regulation of Hydraulic Mining and Preparation of Plans	Maint. Approp. Cost	- -	- -	- -	- -	821,325 821,325
2.	Sacramento River and Tributaries. CA (Debris Control)	New York Approp. Cost	- -	- -	- -	- -	5,093,999 1 2 5,093,999 1 2
		Maint. Approp. Cost	1,129,739 1,170,927	1,200,800 1,111,532	1,462,649 1,435,456	1,456,707 1,531,339	23,453,471 3 23,375,829 4
	(Contributed Funds Other)	New Work Contrib. Cost	- -	- -	- -	- -	323,420 5 315,777 6
3.	Treatment of Yuba River Debris Situation Restraining Barriers, CA (Federal Funds)	New York Approp. Cost	- -	- -	- -	- -	361,482 7 361,482 7
		Maint. Approp. Cost	93,000 89,034	15,841 15,678	48,000 31,218	55,000 76,312	2,760,372 2,760,102
		Rehab. Approp. Cost	- -	- -	- -	- -	1,053,904 1,053,904
	(Required Contributed Funds)	New Work Contrib. Cost	- -	- -	- -	- -	361,777 361,777
		Maint. Contrib. Cost	- 18,047-	160,000- -	4,322 -	- -	2,149,338 1,887,552
		Rehab. Approp. Cost	- -	- -	- -	- -	1,053,904 1,053,904
	(Contributed Funds, Other)	New York Contrib. Cost	- -	- -	- -	- -	36,000 8 34,000
4.	Sacramento River, CA including Sacramento River Flood Control Project (Federal Funds) (Contributed	New York Approp. Cost	-1,500,000 -128,138	-1,427 -	1,817 -	- -	80,739,471 9 80,739,471 9
		Maint. Approp. Cost	- -	- -	- -	- -	1,979,104 1,979,104
		New Work					

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES FOR FY 2003**

**TABLE 35-AA (Cont'd) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003
Funds)	Contrib.	-	-	-	-	-	10,724,085 10
	Cost	-	-	-	-	-	10,724,085 10
	Maint.						
	Contrib.	-	-	-	-	-	9,686 11
	Cost	-	-	-	-	-	9,686 11
Sacramento	New Work						
Urban Area Levee	Approp.	-	-	-	-	-	28,003,000
Reconstruction	Cost	-	-	-	70,000	-	28,001,933
(Federal Funds)							
(Required	New Work						
Contributed	Contrib.	-	-	-	60,000	-	2,217,613
Funds)	Cost	3,852	-	6,508	102,834	-	2,179,869
(Contributed	New Work						
Funds, Other)	Contrib.	-	-	-	-	-	5,867,175
	Cost	-	-	-	-	-	5,867,175
Sacramento	New Work						
River Flood	Approp	8,046,000	3,361,000	424,000	1,378,700	-	18,435,700
Control	Cost	7,905,734	3,407,964	404,779	1,552,354	-	18,362,377
(G.C.I.D),							
CA (Federal		3,900,100	-	-	359,900	-	4,260,000
Funds)		1,855,071	1,157,741	124,442	753,001	-	3,890,255
Sacramento	New Work						
River Flood	Approp.	-5,000	112,000	704,000	1,310,000	-	30,903,794
Control	Cost	87,826	56,726	793,607	1,300,546	-	30,846,151
(Marysville/Yuba							
City Area levees)							
CA (Federal Funds)							
(Required Contributed							
Funds)	New Work						
	Contrib.	-	-293,742	-	684,629	-	9,102,312
	Cost	133,729	233,736	-317,269	596,413	-	6,631,873
Sacramento	New Work						
River Flood	Approp.	2,405,000	867,000	300,000	755,800	-	10,166,800
Control	Cost	2,136,419	1,087,662	376,400	746,418	-	10,132,966
(Mid-Valley Area	New Work						
Levee Reconstruction)	Approp.	424,000	246,500	-	-	-	2,431,000
(Federal Funds)	Cost	495,626	298,051	172,687	-324,852	-	1,145,881

**SACRAMENTO, CALIFORNIA, DISTRICT**

**TABLE 35-AA (Cont' d) COST AND FINANCIAL STATEMENT**

See Section in Text	Project	Funding	FY 00	FY 01	FY 02	FY 03	Total Cost to Sep. 30, 2003
Sacramento	New Work						
River Flood	Approp.		587,000	552,000	-77,000	285,000	2,982,365
Control	Cost		414,210	294,602	369,239	251,076	2,926,222
(Lower Sacra- mento Area Levee Reconstruction) (Federal Funds)	New Work Contrib. Cost		- -	558,615 38,974	- 186,880	60,385 314,344	619,000 540,198
Sacramento	New Work						
River Flood	Approp.		510,000	86,000	149,000	670,000	2,563,206
Control	Cost		330,203	186,319	236,167	649,629	2,494,676
(Upper Sacramento Area Levee Reconstruction) (Federal Funds)	New Work Contrib. Cost		- -	- 90,590	309,600 90,996	432,987 326,871	1,110,987 512,145

1. Exclusive of \$644,503 appropriation and cost on inactive portion of project.

2. Includes \$477,127 for recreational facilities at North Fork (\$32,473) and Harry L. Englebright (\$414,654), Code 710 appropriations and costs.

3. Includes \$17,348,051 from regular funds and \$1,989,336 from Hydraulic Mining in California funds.

4. Includes \$17,339,858 from regular costs and \$1,957,614 from Hydraulic Mining in California costs.

5. Includes \$12,420 contributed funds, other, from State of California Department of Navigation and Ocean Development for acquisition of a boarding float; and \$311,000 funds from State of California Department of Boating and Waterways for refurbishing restrooms and launching facilities at Englebright Dam.

6. Includes \$12,420 costs for acquisition of boarding float and \$280,317 costs for refurbishing restrooms and launching facilities at Englebright Dam.

7. Includes deferred maintenance funds in amount of \$207,500.

8. Miscellaneous engineering and construction accomplished at expense of local interests in connection with rehabilitation of Daguerre Point Dam necessitated by December 1964 floodflows. Includes \$2,000 from Yuba County Water Agency in May 1994.

9. Includes appropriation and cost of \$680,000 for new work for previous project and \$1,486,469 public

works funds for new work for existing project.

10. Includes \$680,000 required contribution for previous project; \$4,939,752 required contributed funds for existing project; and \$310,801 voluntary contribution for bank protection for existing project.

11. Includes \$9,686 required contributed funds for existing project.

12. Includes contributed funds, other, from the State of California for relocation of utilities, irrigation ditch, access ramps, and miscellaneous small structures in the Natomas, Greenhaven Pocket and West Sacramento areas. (Sacramento Urban Area).

13. Includes \$1,328,842 contributed funds, other cost for relocations of utilities, irrigation ditch, access ramps, and miscellaneous small structures in the Natomas, Greenhaven Pocket, and West Sacramento areas.

14. G.C.I.D. construction funds received in FY 1991, but no costs were incurred. Includes \$493,000 total funds and costs under General Investigations for Preconstruction Engineering and Design.

15. Not reflected in actual annual accounting records for Marysville/Yuba City are \$1,710,000 costs for FY 91 and FY 92 incurred under Sacramento River Flood Control Project for design effort. These costs are considered part of Marysville/Yuba City cost-shared project.

**TABLE 35-BB AUTHORIZATION LEGISLATION**

See Section in Text	Date of Authorization Act	Project and Work Authorized	Documents
1.		<b>REGULATION OF HYDRAULIC MINING AND PREPARATION OF PLANS</b>	
Mar. 1, 1893	Created California Debris Commission and authorized: (a) Hydraulic mining under its regulation in drainage areas of Sacramento and San Joaquin Rivers, if possible without injury to navigability of these river systems or to lands adjacent thereto; and (b) preparation of plans by Commission for improvement of navigability of these river systems, and flood and debris-control therein.		Ex. Doc. 267, 51st Cong., 2d sess., Ex. Doc. 98, 47 <sup>th</sup> Cong., 1 <sup>st</sup> sess. 1
Feb 27, 1907	Authorized California Debris Commission to permit hydraulic mining without construction of impounding works, provided there is no injury to navigability of above river systems or lands adjacent thereto.		(Amendment of sec. 13, Act of Mar. 1, 1893.) 1
June 19, 1934	Amended act of Mar. 1, 1893, which provides for construction of debris dams or other restraining works by California Debris Commission and collection of a 3-percent tax on gross proceeds of each mine using such facilities, so as to eliminate this tax and substitute an annual tax per cubic yard mined, obtained by dividing total capital cost of each dam, reservoir, and rights-of-way, by total capacity of reservoir for restraint of debris; and authorized revocation of Commission orders permitting such mining, for failure to pay this annual tax within 30 days after its due date; and also authorized receipt of money advances, from mineowners to aid such construction, to be refunded later from annual payments of yardage taxes on material mined.		
June 25, 1938	Added at end of sec. 23 of above act, a provision that the Secretary of the Army is authorized to enter into contracts to supply storage for water and use of outlet facilities from debris-storage reservoirs for domestic and irrigation purposes and power development, upon such conditions of delivery, use, and payment as he may approve, these payments are to be deposited to credit of such reservoir project, reducing its capital cost to be repaid by tax on mining operations.		
Nov. 17, 1986	Abolished the California Debris Commission and		Sec. 1001, 1986 WRDA

SACRAMENTO, CA DISTRICT

**TABLE 35-BB (Cont'd) AUTHORIZATION LEGISLATION**

See Section in Text	Date of Authorization Act	Project and Work Authorized	Documents
		transferred all authorities, powers, functions, and duties to the Secretary of the Army. Authorized all acquired land and other interests presently under jurisdiction of the Commission to be retained and administered under direction of the Secretary.	
4.	Dec. 22, 1944 And May 17, 1950	<b>SACRAMENTO RIVER, CA</b> Additional levee construction and reconstruction, Including levee protection of Upper Butte Basin, and multipurpose reservoirs. <sup>2</sup>	H. Doc. 649, 78 <sup>th</sup> Cong., 2d sess., and 367, 81 <sup>st</sup> Cong., 1 <sup>st</sup> sess.
	July 3, 1958	Bank protection and incidental channel improvements, Sacramento River from Chico Landing to Red Bluff, and local interests flood plain zoning above Chico Landing. <sup>2</sup>	H. Doc. 272, 84 <sup>th</sup> Cong., 2d sess.
	July 14, 1960	Bank protection works at critical locations, Sacramento River. <sup>2</sup>	S. Doc. 103, 86 <sup>th</sup> Cong., 2d sess.
	May 24, 1994	Acquiring and permanently restoring Little Holland Tract to tidal lands with seasonal and emergent marshlands would not only have substantial environmental benefits, but measurable flood control benefits as well.	H. Doc. 533, 108 <sup>th</sup> Cong., 2d sess.

1. For latest published map, see Annual Report for 1913, p. 3170, and Rivers and Harbors Committee Document 50, 74<sup>th</sup> Cong., 1<sup>st</sup> sess.

2. This supplemental work is reported in detail under Sacramento District, Improvement No. 23.



**TABLE 35- CC                      SACRAMENTO RIVER CA: TOTAL COST  
EXISTING PROJECT TO SEPTEMBER 30, 2003**

Funds	New Work	Maintenance	Total
Regular	\$78,571,131	\$1,979,104	\$80,550,235
Public Works	1,486,469	-	1,486,469
Total U.S.	80,057,600	1,979,104	82,036,704
Contributed Project Work	4,939,752	9,686	4,949,438
Contributed, Other	5,104,333	-	5,104,333
Total All Funds	\$90,101,685	1,988,790	\$92,090,475

1. Includes \$429,671 representing book value of plan purchased with previous project funds and transferred to existing project without reimbursement.

2. Excludes financial information for Sacramento Urban Area Levee Reconstruction, Glenn-Colusa Irrigation District (G.C.I.D.), Marysville/Yuba city

Area Levee Reconstruction and Mid-Valley Area Levee Reconstruction, Lower Sacramento Area Levee Reconstruction and the Upper Sacramento Area Levee Reconstruction Projects, all authorized under the Sacramento River Flood Control Project (See Table 35-AA).

# Albuquerque, NM, District\*

The district comprises the watershed of the Canadian River and its tributaries in New Mexico; the watershed of the Arkansas River and its tributaries in Colorado; the watershed of the Rio Grande and its tributaries, including the Pecos River and its tributaries upstream of Amistad Lake; and the San

Juan River Basin in New Mexico; and the watershed of the Gila, San Francisco, and Mimbres Rivers and its tributaries in New Mexico. Note: The district watershed boundaries were revised in June 1986 to include the portion of New Mexico west of the Continental Divide.

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### Flood Control

#### 1. ACEQUIAS IRRIGATION SYSTEM, NM

**Location.** There are about one thousand Acequias throughout the state of New Mexico, most of which are located in north-central New Mexico.

**Proposed project.** Authorized by the Water Resources Development Act of 1986, Section 1113, the project consists of about one thousand acequias throughout the state of New Mexico. These community ditch systems provide irrigation water to about 160,000 acres on an estimated 12,000 farms.

Acequias have been in existence since the early Spanish Colonization period of the 17<sup>th</sup> and 18<sup>th</sup> Centuries, and represent one of the oldest forms of cooperative institutions in the United States. They are an integral part of the culture and heritage of New

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Mexico. Diversion structures, many of which are constructed of available materials such as rock and brush, are frequently destroyed by flows greater than normal resulting from spring runoff or summer thunderstorms. Disruption of the ditches usually occurs during peak irrigation season and severely impacts crop production. The Water Resources Development Act of 1986 directs the U.S. Army Corps of Engineers to undertake measures, without regard to economic analysis, as are necessary to protect and restore the river diversion structures and associated canals.

**Local cooperation.** The local sponsor, the State of New Mexico, has a law whereby the State of New Mexico provides 17.5% of the project costs, and low interest loans to the local Acequias for the remaining 7.5%. The State of New Mexico has appropriated, and will appropriate, on an annual basis, the funds necessary to meet the requirements of local sponsorship.

## REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES IN FY 2003

**Operations and results during fiscal year.** Funds to initiate construction were received in Fiscal Year 1988. Construction contracts have been awarded every year since FY 1988.

**Condition at end of fiscal year.** There are several projects in various stages of design and construction. Under the Section 215 Program High Rolls, La Joya, El Cerrito Phase II, Abajo and Ancheta Galaz were completed. Farmers Mutual was converted to a 215 and awarded for construction.

### 2. ALAMOGORDO, NM

**Location.** The project is located in south-central New Mexico in Otero County, in and near Alamogordo, NM. The city is situated at the foot of the Sacramento Mountains near the eastern edge of the Tularosa Basin.

**Proposed project.** The authorized project consists of three concrete and riprap-lined diversion channels with 100-year flow capacity, which will intercept flows from the Sacramento Mountains east of the city. For a description of the complete improvement and authorizing legislation, see page 694 of Annual Report for 1966.

**Local cooperation.** The Water Resources Development Act of 1986 applies.

**Condition at end of the fiscal year.** Construction of Phase I of the South Diversion Channel was completed in June 2002. Construction of Phase II is scheduled for completion in May 2004 and Phase III is scheduled for construction award in May 2004. A re-evaluation of the North Diversion Channel was initiated at the request of local interest concerned with potential induced flooding along Red Arroyo. The study determined a detention dam was economically feasible and comparative in cost to the proposed channel.

### 3. ALAMOSA, CO

**Location.** The project lies in south-central Colorado along the Rio Grande, in the community of Alamosa, CO.

**Project.** The project consists of a levee system, which will replace and augment the existing spoil bank levees. (See Table 36-B for authorizing legislation).

**Local cooperation.** The Water Resources Development Act of 1992 applies.

**Operation and results during fiscal year.** Levee construction activities were completed September 1998. Environmental mitigation was completed May 2001.

**Condition at end of the fiscal year.** Construction completed. Environmental mitigation is complete.

### 4. CONCHAS DAM, NM

**Location.** The dam is located in San Miguel County, NM, on the Canadian River, just below the confluence of the Canadian and Conchas Rivers. (See Geological Survey State Map of New Mexico, scale 1:500,000, and Geological Survey topographic map, Tucumcari quadrangle, scale 1:250,000).

**Existing project.** The dam consists of a concrete gravity main section 1,250 feet long with a maximum height of 200 feet above streambed, located in the Canadian River canyon together with earth dikes on each side, having an overall length of about 3.7 miles. The main section contains conduits in its base for the release of water from the reservoir, and an overflow ungated spillway 300 feet long. The earth dikes vary in height up to 100 feet and the north dike contains a concrete ogee-type emergency spillway 3,000 feet long. The reservoir has a gross storage capacity of 513,900 acre-feet (198,170 for flood control; 254,200 for water conservation and irrigation; and 61,530 dead storage). The dam controls 7,409 square miles of drainage area. (See pages 17-16 of Annual Report of 1973 for authorizing legislation).

**Local cooperation.** None needed.

**Operations and results during fiscal year.** The reservoir was operated for storage of floodwater and releases for irrigation purposes. Sediment damages of \$9,600 were prevented during FY 2003. There were no flood damages prevented in FY 2003. Estimated total accumulated flood and sediment damages prevented by the project through FY 2003 are \$4,913,900. Estimated irrigation benefits for FY 2003 are \$2,500. Estimated total accumulated irrigation benefits through FY 2003 are \$11,901,500. The pool elevation at the start of FY 2003 was \$4,164.30 feet with corresponding storage of 90,919 acre-feet. Total releases for this reporting period

## ALBUQUERQUE, NM, DISTRICT

were 1,213 acre-feet. Releases of 0 acre-feet were made to Arch Hurley Conservancy District, 1,213 acre-feet to Bell Ranch. Sediment deposition during the fiscal year was 86 acre-feet.

### 5. EL PASO, TX

**Location.** The project is located at El Paso, El Paso County, TX, which is on the left bank for the Rio Grande in the reach that forms part of the international boundary between the United States and the Republic of Mexico. (Geological Survey Map for El Paso, TX; New Mexico quadrangle, scale 1:250,000).

**Existing project.** This project consists of a single-purpose flood control system of detention dams, diversion dikes, conduits, and channels to collect, regulate and discharge arroyo runoff into the Rio Grande. Runoff from the tributary arroyos on the eastern, southern, and western slopes of the adjacent Franklin Mountains often inundates sections of the city and its outlying suburban developments. The project is divided up into three independent elements: Northwest area, Central area, and Southeast area. The project plan satisfies the 1933 U.S. and Mexico agreement on limited tributary discharge into the Rio Grande in El Paso, Texas. (See Table 36-B for authorizing legislation).

**Local cooperation.** Section 2 of the Flood Control Act of June 28, 1938 applied for the Northwest and Central areas. The Local Cooperation Agreement for the Southeast area reflects the cost sharing requirements contained in the Water Resources Development Act of 1986.

**Operations and results during fiscal year.** Flood control dams in operation during FY 1998 and dates of completion of construction are as follows: Northgate and Range Dams (February 1973); Sunrise and Mountain Park Dams (October 1974); and Pershing Dam (March 1977); Fort Bliss Diversion Channel (November 1978); Oxidation Pond Outlet Conduit (November 1980); Mulberry and Thorn Drive Dams (June 1982); Mesa Dam (September 1982); McKelligon Canyon Dam (October 1982); Keystone Dam (September 1983); Keystone Outlet Conduit (March 1984); Highway Diversion Channel (May 1985); Dam Safety Assurance Program to the existing Range and Northgate Dams (September 1986); Borderland Diversion Channel (September 1986); and Phelps Dodge Basin (January 1990); and Americas Basin (March 1993).

**Condition at end of fiscal year.** At the end of 2002, all construction work in Central and Northwest areas were complete. Construction was completed on the Phelps Dodge Basin in January 1990; Phelps Dodge Channel, June 1992; Americas Basin, March 1993; and Bluff Channel in October 1998. Construction is ongoing for the Lomaland system.

### 6. JOHN MARTIN RESERVOIR, CO

**Location.** The project is located on the Arkansas River in Bent County, 1,159 miles upstream from its mouth, 300 miles downstream from its source and about 18 miles upstream from the city of Lamar, CO. (See Geological Survey maps for Lamar and Las Animas, CO quadrangle, scale 1:125,000).

**Existing project.** The project consists of a concrete and earth fill structure about 2.6 miles long with a maximum height of 106 feet above streambed, and an overflow, gated spillway 1,174 feet long. Total capacity of the reservoir at the top of flood control is 605,115 acre-feet (259,417 for flood control and 345,698 for conservation and recreation storage). This reservoir controls a contributing drainage area of 18,130 square miles and is operated as a unit of coordinate reservoir system for flood control in the Arkansas River Basin. Public Law 89-298 modified the act of June 22, 1936 (49 Stat. 1570) to authorize 10,000 acre-feet of reservoir flood control storage space for fish and wildlife and recreation purposes. For details of the complete improvement and authorizing legislation, see page 17-16 of Annual Report for FY 1973.

**Local cooperation.** Section 3 of the Flood Control Act of June 22, 1936 applies.

**Operations and results during fiscal year.** Operation of the dam and reservoir continued. Regulation of conservation storage continued under rules and regulations of the Arkansas River Compact. Sediment damages of \$66,100 were prevented during FY 2003. Estimated total flood and sediment damages prevented by this project through FY 2003 are \$139,467,700. Estimated irrigation benefits for FY 2003 are \$85,600. Estimated total accumulated irrigation benefits are \$29,851,000. Maximum pool elevation of 3,809.65 feet with corresponding storage of 44,933 acre-feet occurred on April 13, 2003. Total releases for FY 2003 were 73,566 acre-feet. Releases attributed to irrigation benefits amounted to 21,782 acre-feet. Sediment deposition was 590 acre-feet in FY 2003.

## 7. LAS CRUCES, NM

**Location.** The project is located in Las Cruces, NM 40 miles north of El Paso, Texas.

**Proposed project.** The project is authorized by the Water Resources Development Act of 1996. The project consists of enlargement and modifications of two existing detention basins and an irrigation ditch in order to provide increased flood protection to the downtown commercial and residential district of Las Cruces. Total project cost is \$12,600,000 (\$9,450,000 Federal and \$3,150,000 non-Federal). Construction of the project was completed in March 2002.

**Local cooperation.** Water Resources Development Act of 1986 applies. The City of Las Cruces is the non-Federal local sponsor.

**Operations and results during the fiscal year.** Operation and maintenance responsibilities for the project will become the City's responsibility upon completion.

## 8. RIO GRANDE BASIN, NM

**Location.** Improvements are located on the Rio Grande and tributaries in New Mexico. More definitive locations and descriptions of individual projects are in the following paragraphs, and individual reports by projects.

**Existing project.** The Flood Control Act of 1948 authorized the flood control phase of the comprehensive plan of development of water resources of the Rio Grande Basin in New Mexico (H. Doc 243, 81<sup>st</sup> Cong., 1<sup>st</sup> sess.) with the exception of Chinflo Dam and Reservoir and spillway gate structure at Chamita Dam. Although recommended, Chinflo Dam and Reservoir was deleted from the authorized plan. Congress excluded it without prejudice from future consideration. It was requested at that time, by the States of Colorado and Texas, that the project be deferred for re-study regarding required storage and methods of operation. By the same Act, Congress also authorized for the construction irrigation phase of the comprehensive plan as recommended by the Bureau of Reclamation (H. Doc. 653, 81<sup>st</sup> Cong., 2<sup>nd</sup> sess.). The Act also stipulated that work should be prosecuted in accordance with a joint agreement approved by the Secretary of the Army and Acting Secretary of the Interior on November 21, 1957. In addition, under that agreement, the Bureau of Reclamation was given

responsibility for construction, operation, and maintenance of channel rectification, and drainage rehabilitation and extension phases of the unified plan of improvement. Authority for the Chamita Dam and Reservoir was abrogated when Cochiti Dam and Reservoir was authorized. (See Table 36-B for authorizing legislation and Table 36-F for existing projects).

All operations and costs for projects contained in the authorized plan are reflected in individual reports on the following pages.

## 8A. ABIQUIU DAM, NM

**Location.** The project is one unit of the flood control plan for the Rio Grande and tributaries, New Mexico. Abiquiu Dam is located on the Rio Chama near the town of Abiquiu, NM, about 32 miles upstream from the confluence of the Rio Chama and the Rio Grande. (See Geological Survey map for plan and profile of Rio Chama, NM, from mouth to mile 103, sheet 1, and Army Map Service, Aztec, NM; Colorado NJ 13-1, scale 1:250,000).

**Existing project.** The project consists of an earth fill dam 1,450 feet long, 325 feet high, with a 12-foot diameter controlled outlet, and an uncontrolled spillway in a natural saddle about 1 mile north of the left abutment. The reservoir provides 545,784 acre-feet of flood control and sediment storage. Total capacity at the spillway crest is 1,192,801 acre-feet. For a detailed description of the completed improvements and authorizing legislation, see Annual Report of 1973. A major rehabilitation project was completed in September 1980 and the recreation facilities were completed in FY 1981. The County of Los Alamos completed a non-Federal hydropower plant in 1990. The capacity of this plant is 13.2 MW. Drainage adits were completed in 1990 to alleviate seepage problems in the north and south abutments. In 2001 repairs were initiated to the downstream north abutment of the dam where rock movement had been observed. Work continued through 2003. Removal of rock, cutback, rock bolting and some netting has taken place. A study will determine current slope conditions.

**Local cooperation.** None required.

**Operations and results during fiscal year.** Operation of the dam and reservoir continued. Storage and flows were regulated in accordance with Section 203, Flood Control Act of 1960. On October 1, 2002, the pool elevation was 6,174.78 feet. The

## ALBUQUERQUE, NM, DISTRICT

maximum pool (6,186.70 feet) and storage (73,064 acre-feet) occurred on August 14, 2003. On September 30, 2003, the pool elevation was 6,183.49 feet with a corresponding storage of 65,039 acre-feet. There were 591 acre-feet of sediment deposition during FY 2003. There was \$10,400 in flood damages prevented during FY 2003. Sediment damages prevented were \$66,200. Accumulated flood and sediment damages prevented by the project since completion are \$391,659,200 through FY 2003.

**Condition at end of fiscal year.** The project was placed in operation in February 1963. The project structures are in good condition and operational.

### 8B. COCHITI DAM AND LAKE, NM

**Location.** The dam is located at river mile 340 on the Rio Grande (river mile 0 being at the intersection of the New Mexico-Texas state line with international boundary at El Paso, TX), near Pueblo de Cochiti, which is about 50 miles upstream from Albuquerque, NM. (See Geological Survey Map, Cochiti Dam, NM quadrangle and Santo Domingo Pueblo, NM quadrangle, scale 1:24,000).

**Existing project.** This project consists of an earth fill dam about 5.4 miles long with a maximum height of 251 feet above streambed. The project extends generally in an east-west line across the Rio Grande to a point about 2 miles east of the Rio Grande, and then southward across the Santa Fe River. An uncontrolled spillway with a 460 foot-long ogee-weir and a 160-foot notch 10.6 feet deep in the center is part of the embankment on the south side of the Santa Fe River. Operational releases for flood control and irrigation are made through a 3-barrel gated conduit in the left abutment on the Rio Grande. The reservoir has a storage capacity of 582,019 acre-feet at the spillway crest, of which 78,640 acre-feet is dedicated for recreation and sediment control. The project controls flood waters from an 11,695 square-mile drainage area. For more improvement details, see page 17-7 of Annual Report for 1980. See page 17-15 of fiscal year 1981 Annual Report for authorizing legislation.).

**Local cooperation.** None required.

#### **Operations and results during fiscal year.**

Operation of the dam and reservoir continued. The project was completed in June 1975. On October 1, 2002, the pool elevation was 5,339.82 feet with a

corresponding storage of 48,933 acre-feet. The maximum pool elevation was 5,342.28 feet with a storage of 51,985 acre-feet on April 29, 2003. On September 30, 2003, the pool elevation was 5,339.23 feet with a corresponding storage of 48,255 acre-feet. There were 432 acre-feet of sediment deposition during FY 2003. There were no flood damages prevented during FY 2003. Sediment damages prevented were 48,400. Accumulated total damages prevented are \$435,576,800.

**Condition at end of fiscal year.** The dam and appurtenances were placed in operation in 1975. The Cochiti recreation area was completed in 1976, with the Visitors' Center completed in 1977. The Tetilla Peak recreation area was completed in 1981. Project structures are in good condition and in operation.

### 8C. GALISTEO DAM, NM

**Location.** The dam is located at river mile 12 on Galisteo Creek, a tributary of the Rio Grande. The reservoir extends upstream from the dam for about 4 miles, near the village of Waldo, NM (see Geological Survey map, San Pedro 1, NM, quadrangle, scale 1:24,000).

**Existing project.** This project consists of an earth fill dam 2,820 feet long with a maximum height of 158 feet above streambed. The outlet works consist of a 10-foot diameter uncontrolled outlet with maximum discharge capacity of 4,980 cubic-feet-per-second with a pool at the spillway crest elevation. The dam was raised 7 feet and the spillway was widened 575 feet to provide adequate discharge capacity to accommodate the revised probable maximum flood. The dam safety modification was complete in October 1998. The project has 79,600 acre-feet of sediment space. For more details of completed improvements and authorizing legislation, see page 17-17 of Annual Report for 1973).

**Local cooperation.** None required.

#### **Operations and results during fiscal year.**

Operation of the dam and reservoir continued. Operation of the project began on October 11, 1970. The reservoir was empty on October 1, 2002. No storage occurred during FY 2003. Peak inflow was 634 cfs and maximum outflow was 634 cfs. There were 4 acre-feet of sediment deposition during the year, and the reservoir was empty on September 30, 2003. Sediment damages prevented during FY 2003 were \$400 and now total \$176,900 through FY 2003.

**Condition at end of fiscal year.** The project was placed in operation in October 1970. The project structures are in good condition and in operation.

#### 8D. JEMEZ CANYON DAM, NM

**Location.** The project is located in Sandoval County, NM, on the Jemez River, about 2 miles upstream from the confluence of the Jemez River and the Rio Grande, about 5 miles northwest of Bernalillo, NM. (See Geological Survey map for Bernalillo, quadrangle scale 1:125,000).

**Existing project.** This project consists of an earth fill dam 780 feet-long with maximum height of 146.6 feet above streambed, an off-channel uncontrolled saddle spillway 400 feet wide, and a 13-foot diameter gated outlet in the left abutment with discharge capacity of 8,340 cubic-feet-per-second, with a pool at spillway crest elevation. The dam was raised 14.1 feet and the spillway widened 28 feet in 1986 and 1987 to provide adequate discharge capability to accommodate the revised probable maximum flood. The reservoir has a capacity of 97,425 acre-feet at spillway crest (73,000 acre-feet for flood control and 24,425 acre-feet for sediment control). For more detailed description of completed improvements and authorizing legislation, see page 17-17 of Annual Report for 1973).

**Local cooperation.** None required.

**Operations and results during fiscal year.** Jemez Canyon is operated as a dry reservoir, with occasional flood storage. On October 1, 2002, the pool elevation was 5,155.0 feet with a corresponding storage of 0 acre-feet. The maximum pool elevation was 5,155.0 feet with a storage of 0 acre-feet on October 1, 2002. On September 30, 2003, the pool elevation was 5,155.0 feet with a corresponding storage of 0 acre-feet. The reservoir was regulated for sediment control during FY 2003. There was no sediment deposition during FY 2003. There were no flood damages prevented during FY 2003. Sediment benefits during FY 2003 were \$0. Estimated total accumulated flood and sediment damages prevented by the project through FY 2003 are \$25,184,500.

**Condition at end of fiscal year.** The project was placed in operation in October 1953. Project structures are in good condition and all structures are in operation.

#### 8E. MIDDLE RIO GRANDE FLOOD PROTECTION, BERNALILLO TO BELEN, NM

**Location.** The project is composed of 45 square miles of floodplain lying along the Rio Grande from the vicinity of Corrales to Belen, NM.

**Proposed project.** The project was authorized by the Water Resources Development Act of 1986. The project consists of raising and rehabilitating 49.6 miles of levees to provide the 270-year level of protection, and the creation of 75 acres of wetlands from borrow areas within the bosque, and acquisition of 200 acres to satisfy fish and wildlife mitigation requirements. The proposed project will be constructed at an estimated total cost of \$62,400,000 (\$46,800,00 Federal and \$15,600,000 non-Federal) 1 Oct 97 price levels. (See Table 36-B for authorizing legislation).

**Local cooperation.** Water Resources Development Act of 1986 applies. The Middle Rio Grande Conservancy District is the local sponsor.

**Operations and results during fiscal year.** Construction of the Corrales Unit was completed in July 1997. A General Reevaluation Report study for the remaining units (Mountainview, Isleta, and Belen), is currently underway. The study will update costs, benefits, and environmental impacts of the 1986 authorized project. The General Reevaluation Report is scheduled for completion in 2005.

#### 8F. RIO GRANDE FLOODWAY, NM

**Location.** The project is one unit of the flood control phase of the comprehensive plan of improvement for the Rio Grande Basin in New Mexico. It is located on the Rio Grande and covers a section of the river extending from approximately Velarde, New Mexico to Elephant Butte, New Mexico, a distance of approximately 213.

**Existing project.** This project consists of flood protection and major drainage improvements by channel rectification, levee enlargement and construction, and bank stabilization work where needed to protect the levees. Construction of the project is a joint undertaking by the Bureau of Reclamation and the Corps. Portions to be done by the Corps will consist of levee enlargement,

## ALBUQUERQUE, NM, DISTRICT

construction of bank protection work, with channel rectification and drainage rehabilitation work being the responsibility of the Bureau of Reclamation. Levees constructed by local interests exist throughout the reach of the river involved, but are not uniform as to grade, section, or standard of construction, and in many places are threatened by the meandering river. (See Table 32-D on existing project and Table 36-B for authorizing legislation).

**Local cooperation.** In addition to the usual requirements, local interests are responsible for all highway, bridge, and public utility relocations or replacements required in construction of the project. Local interests will also be required to comply with requirements of Section 221, 1970 Flood Control Act, Section 401, 1986 Water Resources Development Act, and PL 91-646 Uniform Relocation Assistance Act of 1970. Total costs for all requirements for the completed Albuquerque unit under terms of project authorization were \$75,000. There were no non-Federal costs in connection with the construction of the Cochiti to Rio Puerco unit of the floodway. The Española Valley unit is in the deferred category. However, by letter dated 10 December 2003 Santa Clara Pueblo expressed their willingness to participate in a feasibility study to address tributary flooding in Española.

**Operations and results during fiscal year.** There were no flood damages prevented by the completed floodway project during FY 2003. Estimated total accumulated flood damages prevented by the floodway project through FY 2003 amounted to \$487,592.00. The peak flow of the Rio Grande through the middle valley was 1,640 cfs at Albuquerque on August 25, 2003. The peak at San Acacia was 3,370 cfs on September 14, 2003.

**Condition at end of fiscal year.** Construction of the Albuquerque unit of the Rio Grande Floodway project is complete. Construction was completed on the Truth or Consequences unit in FY 1991.

### 8G. SAN ACACIA TO BOSQUE DEL APACHE UNIT, NM

**Location.** The authorized project is located along the middle Rio Grande's west bank, extending from the upper end of the Rio Grande low-flow conveyance channel at the San Acacia diversion works to the head of Elephant Butte Reservoir.

**Proposed project.** The project was authorized by the Flood Control Act of 1948 and consists of the

reconstruction of 42 miles of existing spoil bank levee that separates the Rio Grande low-flow conveyance channel from the river floodway and the San Marcial railroad bridge. The proposed project's estimated total cost is \$71,200,000 (\$62,300,000 Federal and \$8,900,000 non-Federal) 1 Oct 93 price levels. (See Table 36-B for authorizing legislation).

**Local cooperation.** The Water Resources Development Act of 1986 and the Water Resources Development Act of 1992 apply. The Water Resources Development Act of 1992 modified the local sponsor's required contribution.

**Condition at end of fiscal year.** The draft LRR/SEIS (dated May 99) was sent forward to higher authority for review and approval. Responses to headquarters review comments and action items concerning the draft LRR/SEIS were completed in May 2003. Pending headquarters approval, the final report will be completed in May 2005 with construction starting in late 2007 on the San Marcial railroad bridge.

## 9. SANTA ROSA DAM AND LAKE, NM

**Location.** The project is located in Guadalupe County on the Pecos River, at river mile 766.4, approximately 7 miles north of Santa Rosa, NM (see Geological Survey map, Corazon, NM, sheet, scale 1:125,000).

**Existing project.** Operation of the project began in November 1979. It consists of an earth and rock fill dam 1,950 feet long and 212 feet maximum height above the streambed. The purposes of this project are flood control, irrigation, and sediment retention. An unlined, open rock cut about 1,000 feet back from the left abutment serves as an uncontrolled spillway. The outlet works, located in the left abutment, consists of a control tower, intake structure with gates, and a 10-foot diameter concrete-lined tunnel with a terminal flip bucket energy dissipater. Storage capacity at the spillway crest is 439,860 acre-feet, which includes 82,860 acre-feet sediment reserve, 200,000 acre-feet irrigation, and 167,000 acre-feet flood control storage. The surface area of the reservoir at the spillway crest is 10,594 acres. The contributing drainage area at the dam site is 2,434 square miles.

For a more detailed report of the authorized project, including the modification to existing Sumner Lake, see page 17-8 of FY 1981 Annual Report. For authorizing legislation, see page 17-14 of FY 1981 Annual Report.



**Local cooperation.** In addition to first costs, operation and maintenance of both reservoirs is the responsibility of the Federal Government; however, the Carlsbad Irrigation District is required to contribute to operation and maintenance costs an amount equal to what they now pay toward Sumner Lake. The Carlsbad Irrigation District (CID) also agreed to use Sumner Lake for flood control. Because the CID realizes equivalent benefits from storage capacity in Santa Rosa Lake, they will continue to fulfill their repayment obligation. The New Mexico Division of State Parks manages the recreation facilities. Activities include camping, picnicking, boating, and hiking.

For more requirements and details on final approval in 1974 for transfer of irrigation storage from Sumner Lake to Santa Rosa Dam and Lake (formerly Los Esteros Lake), see page 17-5 of Annual Report for 1980.

**Operations and results during fiscal year.**

Operation of the dam and reservoir continued. Pool elevation at the start of the fiscal year was 4,703.28 feet with storage of 11,919 acre-feet. Total releases for the fiscal year were 19,792 acre-feet. Pool elevation on September 30, 2003 was 4,687.04 feet with storage of 3,733 acre-feet. The maximum elevation was 4,712.99 feet with storage of 21,475 acre-feet on June 10, 2003. There were 80 acre-feet of sediment deposition during the fiscal year. Sediment damages prevented during the fiscal year were \$9,000. Accumulated flood and sediment damages prevented by the project since completion are \$5,488,100 through FY 2003. Releases attributed to irrigation benefits were \$65,600 with an accumulative total of \$4,013,500 through FY 2003.

**Condition at end of fiscal year.** The project was complete in late 1979 and reservoir operation for irrigation was started in March 1980. Construction of the recreation area was completed in October 1980. Design studies for spillway modification were initiated in FY 1970, and construction was completed in FY 1982. The project structures are in good condition and in operation.

## 10. TRINIDAD LAKE, CO

**Location.** This project is located on the Purgatorie River about 161 miles above its junction with the Arkansas River. The project is about 4 miles upstream from the city of Trinidad, CO. (See Geological Survey map, Trinidad, CO, quadrangle, scale 1:24,000).

**Existing project.** The project consists of an earth fill dam 6,620 feet long with a maximum height of 200 feet above streambed, an uncontrolled spillway 1,000 feet wide in the left abutment, and a 10-foot diameter gate-controlled conduit in the right abutment with discharge capability of 5,800 cubic-feet-per-second with a water surface at top of the flood control pool. In 1985, a 3-foot high parapet wall on top of the upstream face of the dam and a supplemental 700 foot-wide rock cut emergency spillway located on the right abutment were constructed to provide adequate discharge capability and freeboard allowance to accommodate the revised probable maximum flood. In 1989, the recreation pool was increased from 4,500 to 15,967 acre-feet, utilizing some originally unallocated space in the project. The reservoir provides for storage of 51,000 acre-feet for flood control, 35,045 acre-feet for sediment, 20,000 acre-feet for irrigation, and 17,179 acre-feet for recreation, a total of 123,224 acre-feet. The reservoir controls a drainage area of 671 square miles and is operated for flood and sediment control, irrigation, and recreation purposes. For authorizing legislation, see page 17-14 of FY 1981 Annual Report.

**Local cooperation.** Assurances of local cooperation received from the City of Trinidad and Purgatorie River Water Conservancy District were formally accepted May 11, 1967, after execution of an irrigation repayment contract. For complete details of requirements and costs pertaining to the execution of the irrigation repayment contract and the addition of permanent storage for recreation facilities, see page 17-9 of Fiscal Year 1980 Annual Report.

**Operations and results during fiscal year.**

Operation of the dam and reservoir continued. On October 1, 2002, the pool elevation was 6,168.69 feet with a corresponding storage of 13,242 acre-feet. The maximum pool elevation was 6,180.16 feet with a corresponding storage of 20,011 acre-feet on May 5, 2003. On September 30, 2003, the pool elevation was 6,164.57 feet with a corresponding storage of 11,245 acre-feet. Sediment deposition during FY 2003 was 100 acre-feet. Sediment damages prevented during FY 2003 was \$37,400. Accrued sediment benefits are \$2,806,300. Irrigation benefits for FY 2003 were \$41,800. Accrued irrigation benefits through FY 2003 are \$2,424,300. Irrigation benefit releases for the year were 10,626 acre-feet.

**Conditions at end of fiscal year.** The project was placed in operation in 1977. The recreation facilities were completed in 1980. The Dam Safety Assurance

contract was completed in May 1983. The project structures are good and in operation.

## 11. TWO RIVERS DAM, NM

**Location.** The project is located about 14 miles southwest of Roswell, NM on the Rio Hondo and the Rocky Arroyo. The Rio Hondo is formed at the confluence of the Rio Ruidoso and the Rio Bonito, near the village of Hondo, NM, in the foothill region east of Sierra Blanca in the southeastern part of Lincoln County, NM, and flows generally easterly to its confluence with the Pecos River near Roswell, NM. (See Geological Survey map, Hondo Reservoir quadrangle, scale 1:24,000).

**Existing project.** The Two Rivers project consists of two dams: Diamond "A" and Rocky. The Diamond "A" Dam is an earth fill structure, 4,885 feet long and 98 feet high, with a gated outlet. The Rocky Dam is an earth fill structure 2,940 feet long and 118 feet high with an uncontrolled outlet. No provision is made for water storage, except for flood control. Flood releases are controlled so that flows through Roswell will not exceed the Rio Hondo channel capacity, which are about 600 cubic-feet-per-second. A Dam Safety Reconnaissance Report, approved in June 1996, identified the need to increase the size of the spillway on the left abutment of the Rocky Dam by 1,170 feet in order to accommodate the revised Probable Maximum Flood flows for the Dam. The spillway was widened 1,170 feet in 1998 to provide adequate discharge capability to accommodate the revised probable maximum flood. The capacity of the Two Rivers Reservoir at its spillway crest is 163,773 acre-feet of which 13,775 acre-feet are provided for sediment reserve. Together, these dams regulate runoff from 1,027 square miles of drainage area. For details of completed improvement and authorizing legislation, see page 17-18 of Annual Report for 1973.

**Local cooperation.** Section 2 Flood Control Act of 1938 applies and compliance is satisfactory.

### Operations and results during fiscal year.

Operation of the dam and reservoir continued. The reservoir was empty on October 1, 2002. There were no flood damages prevented during FY 2003. There was \$100 in sediment damages prevented during FY 2003. Estimated total accumulated flood and sediment damages prevented through FY 2003 are \$190,605,300. There was 1 acre-foot of sediment deposition during FY 2003. The accrued sediment benefits through FY 2003 are \$1,108,100.

## 12. INSPECTION OF COMPLETED FLOOD CONTROL PROJECTS

Included under this heading is inspection of completed flood control projects transferred to local interests for operation and maintenance. Projects in Texas, Colorado, and New Mexico were inspected. Federal costs for FY 2003 were \$247,003.98.

## 13 SCHEDULING FLOOD CONTROL RESERVOIR OPERATIONS.

Pursuant to Section 7, Flood Control Act of 1944, five projects are operated by others for flood control. These projects are Platoro, Pueblo, Sumner, Navajo, and Brantley Dams.

Platoro Dam on the Conejos River above the town of Platoro, Conejos County, CO, controls runoff from 40 square miles of high mountain area. The authorized purposes are irrigation storage and flood control. The Conejos Water Conservancy District operates Platoro. Total storage is 59,571 acre-feet with the top 6,000 acre-feet solely for flood control. The 53,571 acre-feet is joint-use storage with flood control on a forecast basis during spring runoff. Platoro Dam was authorized by the Interior Appropriation Act of 1941. (See H. Doc. 693, 76<sup>th</sup> Cong. 3<sup>rd</sup> Sess.). The Bureau of Reclamation completed construction of this project in 1952.

On October 1, 2002, storage in Platoro Reservoir was 10,506 acre-feet at elevation 9,964.07 feet. Maximum storage of 13,473 acre-feet at elevation 9,970.51 occurred on October 1, 2002. On September 30, 2003, storage was 7,811 acre-feet at elevation 9,957.63 feet. There were no flood damages prevented by this project during FY 2003. Total flood damages prevented to date are \$6,094,200.

Pueblo Dam is part of the Fryingpan-Arkansas project that was authorized under Public Law 98-590, 87<sup>th</sup> Congress, HR 2206 on August 16, 1962. The project was completed in August 1975. Pueblo is operated by the Bureau of Reclamation and is located at river mile 1,293.7 on the Arkansas River in Pueblo County, CO. Pueblo Reservoir has a total capacity of 349,940 acre-feet at the top of the flood pool with 27,000 acre-feet exclusive flood space and 66,000 acre-feet joint use space.

Operation of Pueblo Reservoir began on February 10, 1974. Storage on October 1, 2002 was 78,076

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acre-feet, elevation 4,826.27 feet. Maximum storage during the year was 114,211 acre-feet at elevation 4,840.70 on March 19, 2003. Storage on September 30, 2003 was 66,192 acre-feet at elevation 4,820.66 feet. There were no flood damages prevented in FY 2003. Total flood damages prevented to date are \$11,316,700.

Sumner Dam is located on the Pecos River at river mile 710.8 in De Baca County, New Mexico. Sumner Dam was authorized as Alamogordo Dam by the Secretary of the Interior under a Finding of Feasibility approved by the President of the United States on November 6, 1935, under the Federal Reclamation laws. The original project was completed in 1937. Modification work of raising the dam 16 feet, adding a spillway and limiting the service spillway floor to 56,000 cubic-feet-per-second, was completed in 1957. A twenty-four inch bypass line was installed in 1977 to pass flows less than 100 cfs.

The Carlsbad Irrigation District operates Sumner Dam. Storage on October 1, 2002 was 3,938 acre-feet at elevation 4,235.17 feet. Maximum storage for FY 2003 was 14,723 acre-feet at elevation 4,248.87 on February 17, 2003. Storage on September 30, 2003 was 2,833 acre-feet at elevation 4,232.45 feet.

Navajo Dam and Reservoir is located on the San Juan River at river mile 298.6 in San Juan County, New Mexico. Navajo Dam was authorized as part of a Colorado River Storage Project by an act of the 84<sup>th</sup> Congress, 11 April 1956 (PL 485). The Bureau of Reclamation constructed and is responsible for operation of the project. Construction was initiated in June 1958, and the project was completed and placed in operation in March 1963. Total capacity at spillway crest is 1,708,600 acre-feet. The project controls a drainage area of 3,230 square miles.

Storage on October 1, 2002 was 871,700 acre-feet, elevation 6,015.62 feet. Maximum storage for FY 2003 was 901,000 acre-feet, elevation 6,018.83 feet on October 1, 2002. Storage on September 30, 2003 was 734,400 acre-feet, elevation 5,999.45 feet.

Brantley Dam, on the Pecos River, above the town of Carlsbad in Eddy County, NM, controls runoff from 13,208 square miles of uncontrolled area. The authorized purposes are irrigation, flood control, fish and wildlife, recreation, and the elimination of the hazards of failure of the McMillan and the Avalon Dams. The total storage is 348,544 acre-feet with 189,700 acre-feet for flood control. Public Law 92-

514 authorized Brantley Dam for construction on 20 October 1972, with the cost ceiling raised for the project in October 1980 by Public Law 96-375. On September 6, 1988, the conduits were closed and Brantley Dam started its initial filling. On September 30, 2003, the storage was 2,804 acre-feet at elevation 3,229.53 feet.

### 14. OTHER AUTHORIZED FLOOD CONTROL PROJECTS

See Table 36-D

### 15. FLOOD CONTROL WORK UNDER SPECIAL AUTHORIZATION

#### **Flood control activities pursuant to Section 205, Public Law 858, 80<sup>th</sup> Congress, as amended (pre-authorization)**

Total Federal costs for Section 205 projects during FY 2003 were \$342,837.85. Individual costs per project were: Little Puerco River, Gallup, NM \$140,244.90; Section 205 Coordination Account \$13,774.31; Hobbs, NM \$29,278.83; Unnamed Arroyo, Hernandez, NM \$1,670.45; Columbus, NM \$92.99; Cheyenne Creek, Colorado Springs, CO \$10,192.28; Raton Creek, Raton, NM \$371.20; Oak Creek, Florence, CO \$56,358.22; Arroyo de la Manteca, Las Vegas, NM \$2,324.18; Estancia, NM \$11,702.76; North Valley, Bernalillo County, NM \$21,871.34; Hatch, NM \$29,789.89; N. Albuquerque Acres, Bernalillo County, NM \$11,306.36; Northeast Canon City, CO \$13,860.14.

#### **Emergency flood control activities; repair, flood fighting, and rescue work. (Public Law 99, 84<sup>th</sup> Cong., and antecedent legislation.)**

There were no Federal costs in FY 2003 for advance preparation, none for flood emergency operations, and there were no repair and restoration costs.

#### **Emergency bank protection (Sec. 14, 1946 Flood Control Act, Public Law 526, 79<sup>th</sup> Cong.)**

Total Federal costs for Section 14 projects for FY 2003 were \$200,194.62. Individually, the costs were as follows: Section 14 Coordination Account \$12,575.49; Isidro Road, Santa Fe, NM \$1,022.84; Rio Puerco River, I-40 Bridge, Gallup, NM \$30,03.84; Unnamed Arroyo, Highway 371, near Crownpoint, NM \$95.69; Paseo del Norte, Albuquerque, NM \$1,359.77; Powers Blvd.,

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Colorado Springs, CO \$59,933.08; Chelton Road Bridge over Sand Creek, Colorado Springs, CO \$36,433.12; 27<sup>th</sup> Street Bridge, Glenwood Springs, CO \$57,394.23; Elephant Mountain, TX \$688.28; Avondale Water Supply, CO \$688.28.

### **Snagging and Clearing for Flood Control (Section 208 of the 1954 Flood Control Act, 83<sup>rd</sup> Cong.)**

There were no costs in FY 2003.

## **ENVIRONMENTAL INFRASTRUCTURE**

### **16. CENTRAL, NM**

**Location.** Central, NM is defined as Bernalillo, Sandoval, and Valencia counties in central New Mexico.

**Proposed project.** Section 593 of the Water Resources Development Act of 1999 authorized the Corps of Engineers to provide assistance to non-Federal sponsors in the form of design and construction for water-related environmental infrastructure and resource protection and development of publicly-owned projects, including projects for wastewater treatment and related facilities, water supply, conservation and related facilities, stormwater retention and remediation, environmental restoration, and surface water resource protection and development.

**Local cooperation.** Local sponsors of the projects are responsible for 25% of the costs associated with each project. The Federal share is 75%.

**Condition at the end of the fiscal year.** To date, seven Project Cooperation Agreements (PCA) have been signed. Of those seven, three projects have been completed, two are under construction, and the remaining projects are in various stages of design. At least two more PCAs are scheduled for signature during fiscal year 2004.

### **General Investigations 17. SURVEYS**

Costs for the fiscal year were \$1,550,059.93 of which 313,437.88 was for flood damage prevention studies, \$449,517.77 for special studies; \$723,415.64 for watershed/comprehensive studies; \$39,914.66 for miscellaneous activities; \$23,773.98 for coordination

with other Federal agencies and non-Federal interests.

### **18. COLLECTION AND STUDY OF BASIC DATA**

Fiscal year costs were \$199,228.51 for floodplain management and technical services.

Hydrological studies involving collection and study of basic data, such as stream flow data, collection of suspended sediment samples, recording rain gage data, special studies, hydro-meteorological studies, sedimentation studies, and environmental data studies continued. Costs during the fiscal year were \$5,327.84.

### **19. ENVIRONMENTAL DATA STUDIES**

There were no Environmental Data Studies for FY 2003.

### **20. PRECONSTRUCTION ENGINEERING AND DESIGN**

There were no Continuation of Engineering and Design Costs in FY 2003.

### **21. OTHER WORK UNDER SPECIAL AUTHORITY**

**Modifications to Structures and Operations of Constructed Corps Projects to Improve the Quality of the Environment, Pursuant to Section 1135 of the 1986 Water Resources Development Act, Public Law 662, 99<sup>th</sup> Congress, as amended.**

Federal cost for Section 1135 was \$1,740,181.73 of which \$22,203.62 was for coordination account funds; \$366.89 was for preliminary restoration plans; \$827,175.66 for Riparian/Wetland Restoration, Pueblo of Santa Ana, NM; \$321,003.63 for Albuquerque Biological Park Wetland Restoration; \$350.78 for Rio Grande Silvery Minnow Habitat Restoration; \$62,152.44 for Pecos River Restoration, Chaves County; \$117,630.20 for Aquatic Habitat Restoration at Pueblo of Santa Ana; \$343,488.39 for Ecosystem Revitalization at Route 66, Albuquerque, NM; \$7,459.25 for Santa Fe, Pojoaque, Rio Grande, NM; \$1,501.41 for East Rio Arriba, Rio Grande, NM; \$2,646.22 Coronado, Rio Grande, NM; \$5,452.66 for Valencia, Rio Grande, NM; \$6,277.69

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Cuidad, Rio Grande, NM; \$4,422.49 Carlsbad, Pecos River, NM; \$7,682.08 Canon City Environmental Restoration; \$7,911.68 Upper Hondo Restoration; \$739.46 Pecos Ecosystem Restoration, NM; \$977.72 Lamar Ecosystem, NM; and \$739.46 DeBaca-Guadalupe Ecosystem Restoration, NM.

**Aquatic Ecosystem Restoration pursuant to Section 206 of the Water Resources Development Act of 1986.**

Federal cost for Section 206 was \$937,790.61 of which \$21,024.77 was for Coordination Account funds; \$326.35 was for Preliminary Restoration Plans; \$1,415.67 for Rio Grande Wetland Restoration; \$540,461.80 for Arkansas River Fisheries Habitat Restoration; \$176,676.58 for Jemez River Aquatic and Riparian Habitat Restoration; \$14,313.03 for Confluence Park Restoration; \$34,192.03 for Las Cruces Wetland Restoration; \$139,247.58 for Bottomless Lakes State Park; \$723.28 for El Paso, TX, and \$9,409.52 for Rocky Ford Wetland Restoration.

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**TABLE 36-A COST AND FINANCIAL STATEMENT**

See Section In Text	Project	Funding	FY00	FY01	FY02	FY03	Total Cost to Sept. 30, 2003
1.	Acequias Irrigation System, NM	New Work					
		Approp.	550,000	1,369,000	4,495,000	1,549,000	19,907,000 <sup>1</sup>
		Cost	802,924	1,115,112	3,273,020	1,031,713	17,762,495 <sup>1</sup>
	(Contributed Funds)	Approp.	-	337,500	-	454,000	4,013,119
		Cost	-	163,928	320,788	50,273	3,011,294
2.	Alamogordo, NM	New Work					
		Approp.	700,000	2,289,000	2,656,000	1,803,000	12,352,997 <sup>2</sup>
		Cost	758,867	1,953,469	2,924,001	1,903,483	12,504,323 <sup>2</sup>
	(Contributed Funds)	Approp.	-	1,725,000	595,000	500,000	2,820,000
		Cost	-	25,801	2,259,877	120,059	2,405,738
3.	Alamosa, CO	New Work					
		Approp.	30,000	-	-	-	5,630,000 <sup>3</sup>
		Cost	55,835	4,285	43,999	-	5,395,331 <sup>3</sup>
	(Contributed Funds)	Approp.	-	-	-	-	440,000
		Cost	14,743	-	-	-	436,927
4.	Conchas, NM	New Work					
		Approp.	-	-	-	-	13,821,499 <sup>4</sup>
		Cost	-	-	-	-	13,821,499 <sup>4</sup>
		Maint					
		Approp.	1,372,500	1,030,820	1,444,707	1,423,734	31,221,350
		Cost	1,372,305	1,037,043	1,341,527	1,504,425	31,184,665
5.	El Paso, TX	New Work					
		Approp.	2,776,000	4,358,000	2,622,000	3,816,798	118,346,861
		Cost	3,987,235	4,577,844	2,348,261	4,091,332	118,228,683
	(Contributed Funds)	Approp.	-	1,633,000	249,000	165,000	5,891,104
		Cost	-	195,619	1,669,224	182,159	5,891,103
6.	John Martin Reservoir, CO	New Work					
		Approp.	-	-	-	-	15,555,358 <sup>5</sup>
		Cost	-	-	-	-	15,555,358 <sup>5</sup>
		Maint					
		Approp.	2,016,748	3,008,370	4,549,077	2,494,888	49,831,703
		Cost	1,949,323	3,091,583	3,588,445	3,474,347	49,826,465
7.	Las Cruces, NM	New Work					
		Approp.	2,913,000	3,580,000	300,000	-29,000	8,456,009 <sup>6</sup>
		Cost	1,965,936	4,295,249	706,732	11,159	8,453,093 <sup>6</sup>
	(Contributed Funds)	Approp.	1,000,000	1,094,156	-	-	2,094,156
		Cost	543,090	642,067	908,731	200	2,094,088
8A.	Abiquiu Dam, NM	New Work					
		Approp.	100,000	-	-	-	34,054,028
		Cost	422,849	-	-	-	33,823,528
		Maint					
		Approp.	1,470,574	1,727,360	2,572,652	2,949,342	47,107,181
		Cost	1,466,183	1,715,049	2,504,269	2,805,923	46,870,025

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES IN FY 2003**

**TABLE 36-A COST AND FINANCIAL STATEMENT**  
**(Continued)**

See Section In Text	Project	Funding	FY00	FY01	FY02	FY03	Total Cost to Sept. 30, 2003
8B.	Cochiti Lake, NM	New Work					
		Approp.	-	-	-	-	96,956,559
		Cost	-	-	-	-	96,956,559
		Maint					
		Approp.	3,151,643	2,223,426	3,172,994	1,681,802	40,888,851
		Cost	3,013,894	2,173,010	2,503,671	2,427,711	40,879,460
8C.	Galisteo Dam, NM	New Work					
		Approp.	476,000	-	-	-	18,283,053
		Cost	674,146	-	-	-	18,213,168
		Maint					
		Approp.	261,564	282,564	292,287	382,054	5,263,802
		Cost	256,764	288,060	284,056	390,668	5,263,755
8D.	Jemez Canyon Dam, NM	New Work					
		Approp.	-	-	-	-	6,293,972
		Cost	-	-	-	-	6,293,972
		Maint					
		Approp.	586,700	3,330,721	1,964,220	3,219,218	20,189,211
		Cost	569,144	3,347,130	1,884,377	3,300,320	20,188,468
8E.	Middle Rio Grande Flood Protection, NM	Approp.	515,000	393,000	229,000	371,202	10,399,202 <sup>7</sup>
	Bernalillo to Belen, NM	Cost	448,369	387,135	304,053	377,396	10,360,778 <sup>7</sup>
	(Contributed Funds)	Approp.	-	-	-	-	2,149,750
		Cost	-	-	-	-	2,109,494
8F.	Rio Grande Floodway, NM	Approp.	-	-	-	-	4,794,868 <sup>8</sup>
		Cost	-	-	-	-	4,794,868 <sup>8</sup>
8G.	Rio Grande Floodway, San Acacia to Bosque del Apache, NM	Approp.	515,000	73,000	162,000	642,000	5,942,000 <sup>9</sup>
		Cost	400,084	233,727	132,460	619,371	5,876,646 <sup>9</sup>
9.	Santa Rosa Dam, NM	New Work					
		Approp.	-	-	-	-	41,039,741
		Cost	-	-	-	-	41,039,056
		Maint					
		Approp.	852,295	855,514	1,223,151	967,966	16,916,682
		Cost	850,637	860,392	1,130,117	1,047,573	16,873,526

**ALBUQUERQUE, NM, DISTRICT**

**TABLE 36-A COST AND FINANCIAL STATEMENT**  
**(Continued)**

See Section In Text	Project	Funding	FY00	FY01	FY02	FY03	Total Cost to Sept. 30, 2003
10.	Trinidad Lake, NM	New Work					
		Approp.	-	-	-	-	55,774,758
		Cost	-	-	-	-	55,774,758
		Maint					
		Approp.	599,977	577,924	1,051,458	550,859	13,296,916
		Cost	601,525	580,793	739,079	859,396	13,292,506
11.	Two Rivers Dam, NM	New Work					
		Approp.	(20,000)	-	-	-	6,759,244
		Cost	54,973	-	-	-	6,757,619
		Maint					
		Approp.	253,459	317,553	276,932	336,557	7,017,366
		Cost	251,444	319,857	272,834	340,538	7,017,226
16.	Central, NM	New Work					
		Approp.	-	2,514,000	596,000	4,892,000	8,002,000
		Cost	-	263,349	1,529,324	3,862,597	3,862,597
	(Contributed Funds)	Approp.	-	-	545,521	117,500	1,070,521
		Cost	-	-	329,259	311,377	640,637

<sup>1</sup> Includes \$200,000 PED funds.

<sup>5</sup> Excludes \$59,977 emergency relief funds for new work. Includes \$30,000 for Code 710.

<sup>2</sup> Includes \$1,186,000 PED funds.

<sup>6</sup> Includes \$591,009 PED funds.

<sup>3</sup> Includes \$734,000 PED funds.

<sup>7</sup> Includes \$1,187,000 PED funds.

<sup>4</sup> Includes \$3,492,696 maintenance and improvement costs and \$869,978 for emergency relief, excludes \$2,279,326 cost of initiating project under the authority of Emergency Relief Appropriations Act of 1935, and \$222,669, the cost for work performed with funds transferred to the Corps under Public Works Acceleration Act of 1962.

<sup>8</sup> Includes funds for pre-construction planning of Española Valley unit. Excludes \$1,000,011 appropriated funds transferred to Bureau of Reclamation under memorandum of agreement between that agency and the Corps.

<sup>9</sup> Includes \$1,658,000 PED funds.



# REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES IN FY 2003

**TABLE 36-B**

## **AUTHORIZING LEGISLATION**

See Section In Text	Date Authorizing Act	Project and Work Authorized	Documents
1.	Nov. 17, 1986	<b>ACEQUIAS IRRIGATION SYSTEM</b> An irrigation system dating back to the eighteenth century with significant engineering work in the settlement and development of the western portion of the United States. Restoration and of this system has a cultural and historical value to the region. Measures are necessary to restore and protect the river division structures and associated costs.	Public Law 662, 99 <sup>th</sup> Cong., 2 <sup>nd</sup> sess. (Sec.1113)
	Oct. 12, 1996	Except that the Federal share of reconnaissance studies carried out by the Secretary under this section shall be 100%.	Public Law 104-30 104 <sup>th</sup> Cong., (Sec. 101)
3.	Oct. 31, 1992	<b>ALAMOSA, COLORADO</b> Authorized a flood control project for Alamosa, CO.	Public Law 102-580 102d Cong., (Sec. 101)
5.	Oct. 27, 1965	<b>EL PASO, TEXAS</b> A single-purpose flood control system of detention dams, diversion dikes and channels to collect, regulate, and discharge arroyo runoff in the Rio Grande. Consists of four independent units (NW Area, Central Area, and two units, Copper system and Bluff Channel of the SE Area).	H. Doc. 207, 89 <sup>th</sup> Cong. 1 <sup>st</sup> sess. <sup>1</sup>
7.	Oct. 12, 1996	<b>LAS CRUCES, NEW MEXICO</b> The project for flood control, Las Cruces, NM; Report of the Chief of Engineers, dated June 24, 1996, at total of \$8,278,000, with an estimated Federal cost of \$5,494,000 and an estimated non-Federal cost of \$2,784,000.	Public Law 104-303 104 <sup>th</sup> Cong., (Sec.)
8.	Jun. 30, 1948	<b>RIO GRANDE BASIN, NEW MEXICO</b> Authorized to be appropriated \$3,500,000 to be expended by the Dept. of the Army for partial accomplishment of approved general comprehensive plan for the Rio Grande Basin in NM and Colorado.	H. Doc. 243, 81 <sup>st</sup> Cong., 1 <sup>st</sup> sess.
	May 17, 1950	Authorized to be appropriated and additional \$39,000,000 for Department of the Army for prosecution of comprehensive for the Rio Grande Basin.	Public Law 516, 81 <sup>st</sup> Cong., 2 <sup>nd</sup> Sess.
	Jul. 14, 1960	Authorized Cochiti Dam on Rio Grande and Galisteo Dam on Galisteo Creek as additions to authorized comprehensive plan for Rio Grande Basin (Cochiti Dam was authorized in lieu of Low Chamita Dam of Chamita Dam Reservoir Project on Rio Chama under "substitute plan"). Also authorized to be appropriated an additional \$58,300,000 for Dept. of the Army for an addition to comprehensive plan for the Rio Grande Basin.	S. Doc. 94, 86 <sup>th</sup> Cong.
	Nov. 17, 1986	Authorized legislation of the Abiquiu Dam Emergency Gates by the Water Resources Development Act of 1986 (PL 99-662).	Public Law 662, 99 <sup>th</sup> Cong., 2 <sup>nd</sup> sess.
	Sep. 30, 1997	The emergency gate construction project for Abiquiu Dam, NM, Authorized by Section 1112 of the Water Resources Development Act of 1986 (PL 99-662, 100 Stat. 4232) is modified to authorize the Secretary of the Army, acting through the Chief of Engineers, to Construct the project at an estimated cost of \$7,000,000. The non-Federal share of the project shall be 25 percent of those costs of the project attributable to an increase in flood protection as a result of the installation of such gates.	

TABLE 36-B

AUTHORIZING LEGISLATION

See Section In Text	Date Authorizing Act	Project and Work Authorized	Documents
8E.	Nov. 17, 1986	<b>MIDDLE RIO GRANDE FLOOD PROTECTION, BERNALILLO TO BELEN, NM</b> Authorized project for flood control, Middle Rio Grande Flood Protection, Bernalillo to Belen, NM. Authorized increase of flood protection through the dredging of the bed of the Rio Grande in the vicinity of Albuquerque, NM, to an elevation lower than existed on the date of enactment of this Act. The project shall include the establishment of 75 acres of wetlands for fish and wildlife habitat and the acquisition of 200 acres of land for mitigation of fish and wildlife losses.	Public Law 662, 99 <sup>th</sup> Cong., 2 <sup>nd</sup> sess.
8F.	Jun. 30, 1948 and May 17, 1950	<b>RIO GRANDE FLOODWAY, NM</b> Channel rectification, levee enlargement and construction, and bank stabilization on Rio Grande between river mile 123 and 394 (San Acacia to Bosque del Apache Unit).	Con., 1 <sup>st</sup> Sess. <sup>1</sup> and Public Law 516, 81 <sup>st</sup> Cong., 2 <sup>nd</sup> sess.
8G.	Oct. 31, 1992	<b>RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE UNIT, NM</b> Modified the cost sharing to more equitably reflect the non-Federal contribution for the project by that percentage of benefits which is attributable to the Federal properties; except that, for purposes of this subsection, Federal property benefits may not exceed 50 percent of the total project benefits.	Public Law 102-580 102d Cong., (Sec. 102(e)).
16.	Aug. 17, 1999	<b>CENTRAL, NM</b> Design and construction assistance for water-related environmental infrastructure and resource protection and development projects to include wastewater treatment and related facilities, water supply, conservation and related facilities, stormwater retention and remediation, environmental restoration, and surface water resource protection and development. Federal costs under each local cooperation agreement shall be 75 percent in the form of grants or reimbursements. The non-Federal share of operation and maintenance costs shall be 100 percent. Authorized appropriation is \$25,000,000 available FY 2000 and remain available until expended.	Public Law 106-53, 106 <sup>th</sup> Cong., (Sec. 593)

**REPORT OF THE SECRETARY OF THE ARMY ON CIVIL WORKS ACTIVITIES IN FY 2003**

**TABLE 36-D**

**OTHER AUTHORIZED FLOOD CONTROL PROJECTS**

Project	For Last Full	Cost to September 30, 2003	
	Report, See Annual For	Construction	Operation & Maintenance
Alamogordo Diversion Channel, Tularosa (closed) Basin, NM	1996	\$ 189,356	-
Albuquerque Diversion Channels	1998	19,348,480	-
Alpine, Texas	1977	130,488	-
Cibola Creek, Texas <sup>1</sup>	1983	829,500	-
Cochiti Wetfields, New Mexico	1994	13,921,290	-
Colorado Springs, Fountain que Bouille River, Colorado (Templeton Gap Floodway) <sup>1</sup>	1959	881,262	-
Creede, Willow Creek, Pueblo, Colorado <sup>1</sup>	1952	219,875	-
Fountain Creek, Pueblo, Colorado <sup>1</sup>	1993	6,564,399	-
Highway 12, Colorado <sup>1</sup>	1985	120,500	-
Holly, Colorado <sup>1</sup>	1985	2,021,400	-
Las Animas, Colorado <sup>2</sup>	1980	4,956,000	-
Las Cruces, New Mexico <sup>2</sup>	1980	5,521,968	-
Pecos, Texas <sup>3</sup>	1977	480,273	-
Piñon Canyon Dam, Trinidad, Colorado (Sec. 212) <sup>1</sup>	-	130,678	-
Pueblo, Arkansas River, Colorado (floodway levee extension) <sup>1</sup>	1954	201,958	-
Puerco River, Gallup, New Mexico <sup>1</sup>	1993	4,971,394	-
Rio Grande Floodway, T or C Unit, New Mexico <sup>1</sup>	1994	12,955,052	-
Santa Fe River and Arroyo Mascaras, New Mexico <sup>1</sup>	1983	1,136,250	-
Smith Creek, Colorado <sup>1</sup>	1985	219,000	-
Socorro Diversion Channel, Tributaries of Rio Grande, NM	1965	2,259,328	-
<sup>1</sup> Completed	<sup>2</sup> Responsibility of Local Interests	<sup>3</sup> Inactive	<sup>4</sup> Deferred

**TABLE 36-F**

**RIO GRANDE BASIN, NM  
RIO GRANDE BASIN, NM: EXISTING PROJECT  
(See Section 8 of Text)**

Project	River	Miles Above Mouth	Nearest Town	Drainage Area (square miles)	Description	Total Estimated Cost
Abiquiu Dam	Rio Chama	32	Española, NM	2,147 1,212,000 af cap.	Earthfill 325 feet high	\$30,901,028 <sup>3</sup>
Jemez Canyon	Jemez Creek	2	Bernalillo, NM	1,034 106,100 af cap.	Earthfill 136 feet high	\$ 6,293,000
Rio Grande Floodway	Rio Grande	123 to 394	-		Channel rectification, levee enlargement & construction	\$25,744,000 <sup>2</sup>
Cochiti Lake	Rio Grande	340 <sup>1</sup>	Cochiti, NM	11,695 596,300 af cap.	Earthfill 158 feet high	\$96,956,559
Galisteo Dam	Galisteo Creek	8	Waldo, NM	596 89,000 af cap.	Earthfill 158 feet high	\$17,807,053

<sup>1</sup> River mile 0 is at intersection of New Mexico-Texas state line with international boundary at El Paso, Texas.

<sup>2</sup> Does not include non-Federal costs.

<sup>3</sup> Includes \$5,383,000 major rehabilitation, \$138,900 for recreation facilities, and \$3,600,000 for emergency gates.